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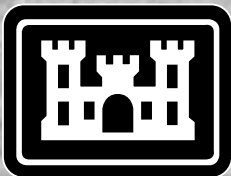
Digest

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Environmental Management



**US Army Corps
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On the cover: These flowering specimen trees lining Mapes Road near the golf course are some of the hundreds of thousands of trees growing on the Fort Meade installation that have helped the post be named a Tree City USA eight times by the National Arbor Day Foundation. (Photo by K.L. Vantran)

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Secretary of the Army Fiscal 1999 Environmental Award Winners

by Cynthia L. Houston

Nineteen installations, individuals and teams received the Secretary of the Army Fiscal Year 1999 Environmental Award during an April 25 ceremony at the Pentagon. Winners of this year's award earned their honors by capitalizing on emerging technologies and by adopting corporate approaches to improve business practices.

"Today's Army is more committed than ever to making responsible stewardship a part of day-to-day operations," said Louis Caldera, Secretary of the Army. "Winners of these awards, whether an installation, a team or an individual, exemplify how using best business practices and the latest technology protects our national resources and ensures our military readiness."

Using global positioning and geographical information systems, post environmental teams gathered data on soil erosion at Fort Hood, Texas, monitored pollution discharges at Tobyhanna Army Depot, Pennsylvania, and identified Native American archeology sites at Fort Riley, Kansas.



The Hawaii Army National Guard works to protect the islands' endangered plants.

Other environmental award winners showed how stewardship of Army lands works much like a business. Recycling programs were turned into profitable business operations, generating funds for community awareness campaigns.

Hazardous waste tracking systems, such as one created by the Bradley Environmental Management Team, yielded solutions to vehicle design by accounting for hazardous materials used during the manufacturing process.

MG Robert L. Van Antwerp, the Army's Assistant Chief of Staff for Installation Management, praised each of the winners for their achievements as they competed "against the best people and organizations in the Department of Defense and captured the top award in its category." Each exemplifies the commitment to environmental stewardship felt by the Army, major commands and installations, according to Van Antwerp.

Each year, the Secretary of the Army Environmental Awards recognize achievements in Natural Resources Conservation, Cultural Resources Management, Environmental Quality, Pollution Prevention, Recycling and Environmental Cleanup.

Chosen as the Army's best for Fiscal Year 1999, most of the following Army winners went on to compete with winners from the Navy, Air Force and Marine Corps for a Secretary of Defense Environmental Security Award. Six of the nominees were winners at the Defense Department level, and were recognized with an Environmental Security Award on April 26 in the Pentagon.

Winners of the Environmental Quality, Overseas Installation; Environmental Quality, Overseas Team; and Cleanup, Restoration Advisory Board Team awards competed at the Secretary of the Army level only.

Natural Resources Conservation

The U.S. Army Training Center and Fort Jackson, South Carolina,



The Biological and Cultural Resources Management Team at Fort McCoy, Wisconsin, develops plans to protect the installation's endangered wildlife, such as the Blanding's Turtle.

won the Natural Resources Conservation award for a large installation by providing realistic training for more than 33,000 resident soldiers while preserving a habitat that supports three endangered species.

The **Hawaii Army National Guard**, responsible for 34 sites throughout the Hawaiian islands and some of the most biologically diverse lands in the United States, won the Natural Resource Conservation award for a small installation by protecting native plant and animal species and promoting sustainable practices in land use.

The **Biological and Cultural Resources Management Team at Fort McCoy, Wisconsin**, a contributor to Wisconsin's plans to protect the endangered Karner blue butterfly, won the Natural Resources Conservation team award for conservation efforts that assisted land managers in minimizing the impact of military training on the butterfly's habitat.

Cultural Resources Management

For managing 1,200 cultural resources which include more than 200 prehistoric sites and nine Native American burial grounds, **Fort Riley, Kansas**, won the Cultural Resources Management installation award.



Dr. Mark W. Allen, Muhammed A. Bari, William M. Quillman and Dr. Robert B. Rechtman from the National Training Center and Fort Irwin, California, won the Cultural Resources Management team award for protecting archaeological sites that include Native American camps and aboriginal trails at one of the Army's most intensive training areas.

Environmental Quality

Tobyhanna Army Depot, Pennsylvania, home to the Defense Department's largest communications and electronics facility, won the Environmental Quality award for an industrial installation for conservation and monitoring programs that preserve Pennsylvania's natural resources.

For using emerging technologies in geographic information systems to manage training lands and for environmental partnerships which advance species habitat research, **Headquarters III Corps and Fort Hood, Texas**, won the Environmental Quality award for a non-industrial installation.

Camp Carroll, Korea, won the Environmental Quality award for an overseas installation for implementing solvent, antifreeze, and battery recycling operations and for being the first installation in Korea to activate a hazardous materials pharmacy, or HAZMART, to track materials over their lifecycle.

For its water quality and conservation initiatives, and for educational programs for academy cadets which foster hands-on environmental learning, the **United States Military Academy**,

Radford Army Ammunition Plant, Virginia, uses "focused factories" to concentrate on distinct types of products and their waste challenges.



New York, won the Environmental Quality team award.

The **280th Base Support Battalion, located in Schweinfurt, Germany**, won the Environmental Quality award for an overseas team by opening a state-of-the-art hazardous waste facility to recycle 90 percent of the community's hazardous waste, and for upgrading hazardous material storage facilities in tactical battalions and squadrons.

Pollution Prevention

Radford Army Ammunition Plant, Virginia, the largest active propellants and explosives manufacturing facility in the United States, won the industrial installation Pollution Prevention award for maintaining a highly effective pollution prevention program which protects Virginia's New River valley.

Headquarters III Corps and Fort Hood, Texas, won the Pollution Prevention award in the non-industrial installation category for eliminating more than 8 million pounds of hazardous and state-regulated waste each year over the past two years, avoiding more than \$2 million in disposal costs. The comprehensive program of source reduction, reuse and recycling also cuts significantly the amount of wastewater and air emissions produced by the fort. **Randy Doyle**, an environmental protection specialist at Headquarters III Corps and Fort Hood, won the individual Pollution Prevention award for operating a highly effective and influential pollution prevention program on the Texas installation.

For programs to reduce the use and output of hazardous materials in the design, manufacture, testing, operation, demilitarization and disposal of the Bradley family of military vehicles, the **Bradley Environmental Management Team, based in Warren, Michigan**, won the Pollution Prevention team award for weapons system acquisition.

Recycling

Fort Riley, Kansas, home of the 24th Infantry Division and over 100 thousand acres of training land for mechanized forces, won the Recycling award in the non-industrial installation category for recycling 7.1 million pounds of materials in 1998, greatly exceeding the National Recycling Coalition's estimated national



PFC Jason Wood separates recyclable paper at Fort Hood's state-of-the-art recycling center. (Photo by Laura L. Duncan.)



average of 4.3 million pounds by communities of a similar size.

For his leadership in opening a 28,000 square-foot recycling center and for creating an aggressive public outreach campaign that includes educating local children on the principles of recycling, **Richard L. Lucas, Sr., of the U.S. Army Training Center and Fort Jackson, South Carolina**, won the Recycling award in the individual category.

Environmental Cleanup

Fort Campbell, Kentucky, home of the 101st Airborne "Screaming Eagles" Division, won the Environmental Cleanup award in the installation category for its effectiveness in involving community members and regulators in planning the cleanup process, resulting in rapid closure of sites and a reduction in cleanup costs.

For his management of cleanup efforts as the Defense Restoration Program Manager for AMC, and for ensuring his cleanup initiatives were applicable to programs beyond his immediate management chain, **Krishna Ganta**, a

A soldier drops off recyclables at the Fort Riley, Kansas, recycling center. In 1999, Fort Riley processed 1,516,332 pounds of scrap metal.



professionally licensed civil engineer working for the Army Materiel Command, won the Environmental Cleanup award in the individual category.

The **Fort Bliss, Texas, Restoration Advisory Board**, won the Environmental Cleanup award in the Restoration

Advisory Board team category for securing public confidence in the post's cleanup efforts as it works to resolve restoration and public safety concerns at the post's former training sites.

The U.S. Army Environmental Center, in cooperation with the Army's Office of the Directorate of Environmental Programs and the Army's Office of the Assistant Chief of Staff for Installation Management, manages the Secretary of the Army Awards Program for the Office of the Secretary of the Army.

For more information on the recipients of the Secretary of the Army Fiscal 1999 Environmental Awards, please contact Cynthia Houston, U.S. Army Environmental Center at (410) 436-6817 or visit USAEC's Web site at <http://aec.army.mil>. Click on the "News Room" button to locate complete press information. "America's Army: Preserving the Past, Protecting the Future"

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PWD

Cynthia L. Houston is an environmental public affairs specialist at the U.S. Army Environmental Center.

Army Communities of Excellence Awards

General Eric K. Shinseki, Army Chief of Staff, recently announced the winners of the Army Communities of Excellence (ACOE) program.

ACOE contributes significantly to Army base operations and has improved the quality of life for soldiers, Army civilians and their families.

The mission of the ACOE program is to provide quality environment and excellent facilities and services. The ACOE integrates the Malcolm Baldrige National Quality Award criteria in the Army Performance Improvement Criteria for installation assessments. The Baldrige criteria is the standard for world-class quality. This criteria is a comprehensive and integrated change management framework, allowing an organization to assess its approach, deployment, and results of its effort to change. All Army installations, regardless of size, are assessed against this criteria, not against each other.

The award ceremony was held May 11 in the Pentagon Courtyard.

Winners:

Commander-in-Chief Winner:

- Army Armament Research, Development and Engineering Center, Picatinny Arsenal, New Jersey

Chief-of-Staff-of-the-Army Winners:

- Fort Stewart & Hunter Airfield, Georgia
- Fort Benning, Georgia
- Fort Rucker, Alabama
- 279th BSB, Bamberg, Germany
- Rock Island Arsenal, Illinois
- Huntsville, Engineering and Support Center, Alabama
- 10th ASG, Okinawa, Japan
- Tobyhanna Army Depot, Pennsylvania
- 100th Division, Louisville, Kentucky
- 34th Support Group, Korea
- White Sands Missile Range, New Mexico
- Maryland Army National Guard
- Fort Belvoir, Virginia **PWD**



Army awards for Historic Preservation

The Army recently announced the winners of the Secretary of the Army Awards for Historic Preservation program.

The awards program is designed to recognize excellence in all aspects of managing historic buildings and districts located on active Army posts in the United States. Award activities and innovations may be performed solely by Army organizations or jointly between the Army and other public and private sector entities.

The inaugural awards ceremony was held in conjunction with National Preservation Week on May 16 at the National War College on Fort McNair, Washington, D.C.

There are four categories for the Historic Preservation awards: Historic Districts, Historic Buildings, Innovations, and Partnerships.

Winners:

Historic District

Fort Riley, Kansas (U.S. Forces Command). This category recognizes excellence in the rehabilitation and preservation of a related grouping of historic buildings. The Fort Riley Main Post Historic District contains more than 200 historic buildings dating from the mid- to late-19th century that support installation operations.

Historic Building

Roosevelt Hall, Fort McNair, Washington, D.C. (U.S. Army Military District of Washington). This category recognizes excellence in the rehabilitation and maintenance of a single historic facility. The National War College's Roosevelt Hall was designed in 1906 by the noted firm of McKim, Mead and White. A complete renovation was accomplished in 1999, providing modern utility upgrades, improved user spaces, and restoration of the architectural features.

Innovation

Fort McPherson, Georgia (U.S. Forces Command). This category recognizes individuals and small teams



*Cultural resource programs at Fort Riley, Kansas, include management of the U.S. Cavalry Museum, located in the post's historic district.
(Photo by Jill Dalton.)*

who have worked to develop solutions to complex problems in the management, financing or rehabilitation of historic buildings. This post's civil engineer/architect, cultural resources manager and fire marshal worked closely to overcome challenges in rehabilitating the structure while not compromising fire and life safety requirements.

Partnership

Mississippi River Commission Building, Vicksburg, Mississippi (U.S. Army Corps of Engineers).

This category recognizes Army entities and others that have assisted in providing joint programs to fund, rehabilitate or operate historic buildings. This building was rehabilitated with the assistance of the General Services Administration and the Mississippi State Historic Preservation Office.

The awards were selected by a distinguished jury who represented several facets of historic preservation, including land

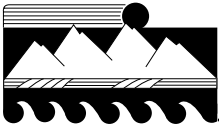
planning and development, restoration and adaptive reuse, financing, design and construction, and public-private partnerships. Jurors included representatives of the National Trust for Historic Preservation, the General Services Administration, the American Institute of Architects, the President's Advisory Council on Historic Preservation, the National Park Service, and U.S. Army.

The Army manages one of the Nation's largest portfolios of historic properties that includes fifteen National Historic Landmarks and approximately 12,000 Army properties that are listed on or eligible for the National Register of Historic Places. During the next 30 years, more than 70,000 other buildings on Army posts will reach 50 years of age and will be evaluated for compliance with the National Historic Preservation Act.

These properties cover a broad spectrum of historic eras, architectural styles, building types, and land uses. Army properties are a significant part of our national heritage, telling the story of America one Army post at a time. They help the Army to recall the rich legacy of our great nation.

To insure our Army's properties are preserved to inspire tomorrow's generations, the Army established an office for Historic Properties. This new office was established to explore the applicability of financing and technical tools available in the private sector to leverage Army resources. The Army will consider partnering arrangements, joint use, and outside sponsorship to preserve the Army's and the Nation's heritage in the most economical ways possible.

POC is LTC Hansen, Public Affairs Officer, Assistant Secretary of the Army for Installations and Environment, (703) 692-9802. **PWD**



Environmental stewardship means good business

by Randy Didier

Tobyhanna Army Depot, Pennsylvania, has earned high-level recognition as an environmental leader. This year, our recognition came in the form of the U.S. Army Environmental Quality Award for Industrial Installations. This award is one of the top environmental awards an Army installation can receive.

In winning the award, depot employees have proved that being good environmental stewards also makes good business sense. This successful business practice is not attributed to any one organization. On the contrary, it is the combined actions of a multitude of organizations that helped to reach this achievement.

So, how have our environmental efforts made good business sense? The Energy Savings Performance Contract (ESPC) with HEC Inc. was the brainchild of the depot's Public Works Directorate. Through their foresight, and with the support of numerous other participating depot organizations, this ESPC will help to make us more energy efficient, environmentally friendly and cost effective.

In May, the depot's environmental liability will lessen. The aging, environmentally challenging coal-fired central heating plant will cease to function. This plant was not only the largest single air pollution source, it also had the potential to pollute the surface runoff from the coal pile and was an extremely inefficient energy producing facility. Air emissions will be reduced by 60 percent annually, saving the depot payment of annual air emission fees.

We will also realize 20 percent annual savings in water consumption by no longer using the underground steam and condensate distributions systems. The depot's energy consumption will be reduced by 40 percent from present consumption levels.

Other ways the depot is improving its business practices is through coordination. The Environmental Management Division (EMD) is working with

the Directorates of Contracting and Public Works to improve contractor awareness of environmental laws and regulations. The three organizations have contributed to developing an updated checklist to be handed out to contractors performing work on the depot. Contracting Officer Representatives (CORs) also use this checklist as a reminder of environmental requirements associated with contracts.

The use of the checklist should further reduce the risk of an environmental mishap by a contractor. Such mishaps could lead to environmental fines and penalties to both the contractor and to the depot.

The EMD also coordinated with the Production Engineering Directorate's Industrial Modernization Division to develop an equipment purchase checklist. By utilizing this checklist, engineers and engineering technicians will become more familiar with the environmental consequences associated with the complicated equipment that is being purchased to support the depot's mission.

Furthermore, depot organizations are contributing to meeting environmental requirements through their own actions by reviewing environmental concerns to improve efficiencies. The Defense Reutilization and Marketing Office inspects the hazardous waste storage facility daily to ensure that all hazardous waste stored in the facility is in its proper place, labeled correctly and sealed. This will help in the timely and safe removal of hazardous waste from the depot.

The depot's Business Management Directorate is reviewing shops for quality control as part of the Contract Performance Certification Program (CP2) initiative. The potential for spills or



hazardous materials wasteful use practices will decrease due to CP2 reviews that redirect and focus shop actions on quality.

The depot's continuous improvement and teaming effort initiatives will continue with the full implementation of ISO 14001 (the environmental equivalent of CP2). We are almost there, but we have to improve document control and employee awareness. Over the next several months, you will all be hearing and reading more about ISO 14001.

A teaming effort is happening right now that will improve the environmental reviews of all projects. Four depot directorates are developing the electronic mapping of the depot and the depot infrastructure. This electronic mapping is called the Geographical Information System (GIS). The GIS links to databases, when implemented, will show and explain almost any spatial relationship (association of objects to each other) the depot has. It improves the management and protection of natural resources and allows us to know the exact location of environmentally-sensitive areas.

The above teaming efforts only show a few of the inherent business functions the depot has and is looking into implementing to ensure environmental compliance. The depot has a long history of doing what makes good business sense with minimum impact to our environment.

Earning environmental awards serves as a reminder to all depot employees that we are doing our part to manage the resources entrusted to us.

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Randy Didier is the Chief of the Environmental Management Division at Tobyhanna Army Depot.

(Editor's Note: Take a virtual tour of Tobyhanna by visiting www.tyad-emd.army.mil.)



Schweinfurt Military Community's Summary Development Plan wins National Award

by Torrie McAllister

Dan LeFevre, Europe District Project Manager for Summary Development Plans, and Ned Reynolds, Europe District Chief of Planning, study the Schweinfurt Study Development Plan.



The Schweinfurt military community's Summary Development Plan is one of twenty engineering projects worldwide that were recognized for excellence in the Chief of Engineers Design and Environmental Awards Program – 2000.

The Schweinfurt Summary Development Plan was developed by the Corps of Engineers' Europe District and the 280th Base Support Battalion. It distills reams of master planning digital and computer data, maps and plans into one concise deskside notebook that is easy for everyone in the community — from the senior tactical commander to Director of Community Activities to use. The Summary Development Plan, which highlights the community's pri-

ority land use and facility issues, provides leaders a compass to guide key decisions on community development. It gives the BSB Commander and Director of Public Works an executive level planning tool that summarizes facility deficiencies and accomplishments. It helps them prioritize future improvements and quickly see the impact of changes on surrounding land and facilities.

Summary Development Plans are one of Department of Army's hottest new planning tools. They were pioneered in U.S. Army Europe by the Deputy Chief of Staff Engineer and the Corps of Engineers Europe District to help cope with the shortage of master planners and updated planning tools

during the troop drawdown of the 1990s. The deskside reference quickly proved so popular with Commanders that it is being adopted Armywide. U.S. Army Europe has now invested in summary development plans for all of its military communities.

"Our Summary Development Plan is invaluable for decision makers involved in the continued and orderly development of our installations," said 280th BSB Commander LTC James H. Comish. "Tactical commanders and staff directors use it to assist them in making decisions that affect the continued development of our installations and our ability to provide services to soldiers, civilians and families."

The Schweinfurt Summary Development Plan was prepared by Architect Engineer Firm Black and Veatch, Overland Park, Kansas, under the direction of Europe District Summary Development Plan Project Manager Dan LeFevre, and the 280th BSB DPW, led by MAJ John McClellan, Jr. Europe District project manager Lisa Spratt prepared the award package.

The Chief of Engineers Design and Environmental Awards are presented biannually and judged by a jury of members from nationally recognized professional associations and Architect Engineer firms.

POC is Dan LeFevre, DSN 336-2404. **PWD**

Torrie McAllister is the public affairs officer for Europe District, U.S. Army Corps of Engineers.

Huntsville offers many environmental services

The Corps of Engineers' Huntsville Center (HNC), in partnership with local supporting Districts, manages and provides (through existing contracts and in-house expertise) various environmental services focusing on studies and remediation. These services include:

- Baseline studies.
- Design, construction, operation and maintenance of pollution abatement facilities.
- NEPA documentation and environmental permits.

- Compliance audits.
- Support in negotiations with regulatory agencies.

Additionally, HNC maintains an Environmental Data Management System (EDMS) for efficient analysis and status reporting of installation environmental programs, including groundwater treatment monitoring data.

For assistance, please contact Dr. Sam Sang, (256) 895-1631, e-mail: sam.s.sang@hnd01.usace.army.mil **PWD**



Fluorescent light bulbs must be recycled as hazardous waste

by Wendy Gross

Fluorescent light bulbs are an invention of the 20th century. Designed to save energy over incandescent lighting, the bulbs have a coating of fluorescent material on its inner surface and contain mercury vapor whose bombardment by electrons from the cathode provides ultraviolet light that causes the material to emit visible light. Unfortunately, when things are invented to take care of one problem, another problem can materialize.

Starting in January 2000, the Environmental Protection Agency (EPA)

classified fluorescent light bulbs as hazardous waste because of the mercury content in the bulb. Millions of bulbs were being discarded in landfills, and the agency saw an opportunity to reduce the risk to human health by banning disposal of the bulbs in landfills and possibly recovering the mercury.

Like other hazardous waste regulations, there are exceptions. The most widely justified one is that household waste is exempt. Therefore, fluorescent bulbs coming from your house do not require special treatment.

However, businesses, like Tobyhanna Army Depot, are not so lucky. Tobyhanna generates, on average, 100 burned-out bulbs a day from office areas, bay lighting and shelters.

Another exemption is the Universal Waste Rule. Under this rule, the generator is exempted from hazardous waste labeling and manifesting requirements, and some shipping requirements, and is allowed to accumulate the bulbs for up to a year, if the bulbs are recycled.

When fluorescent bulbs were not deemed hazardous waste by the EPA, the depot used bulb crushers. These machines crushed the bulbs and trapped the mercury in a filter. Under the new rule, the EPA has determined that this is treatment of hazardous waste and requires a permit.

Continuing the bulb-crushing operation would have increased the depot's environmental liability. Consequently, the depot decided it would take advantage of the Universal Waste Rule and collect and recycle the bulbs.

There are three collection points for bulbs at Tobyhanna, with instructions posted at each location. It is important that the burned-out bulbs are packed tightly in the recycle containers so there are no voids in the boxes for movement. Packing this way will protect them in shipment.

Remember, fluorescent bulbs that are generated from an industrial facility cannot be discarded in the regular trash.

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Wendy Gross is an Environmental Engineer in the Environmental Management Division at Tobyhanna Army Depot.

Pamphlet identifies Green Building technologies

by Jeff Breckenridge

You can minimize waste generation, reduce energy consumption, encourage recycling, and conserve natural resources during environmental restoration activities. Technical assistance is available in the U.S. Army Corps of Engineers (USACE) Engineering Pamphlet (EP) 200-1-10, "Green Building Technology in Hazardous Waste Cleanup Applications," which identifies Green Building technologies and opportunities at environmental restoration sites. Green Building goes beyond simply using green products and recycled materials. Green Building is an environmental consciousness or resource awareness about using or minimizing the use of valuable natural resources in an energy-conscious or conservative way.

Executive Orders and DOD policies mandate the use of Green Building approaches. This guidance provides project-planning tools for incorporating Green Building approaches into environmental restoration projects. The EP provides a description of the regulatory background, Green Building technologies, opportunities and issues to be considered at environmental restoration sites, and guidance on how to implement Green Building activities along with extensive supporting references and websites to obtain further information.

The following are examples of USACE Green Building Success Stories detailed in Chapter 5 of the EP.

- Mead Army Ammunition Plant: Concrete Rubble from a demolition is used as rip-rap for bank stabilization and for road base material.
- Holloman AFB, NM: JP-4 recovered from a free product recovery system was reused as fuel for a thermal oxidizer.

The information provided within the EP, along with supporting information, serves as a foundation for project managers to meet the Green Building needs of their projects and customers. Engineering Pamphlet 200-1-10 "Green Building Technology in Hazardous Waste Cleanup Applications, 10 Dec 1999, can be obtained at <http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep.htm>.

For more information, please contact Jeff Breckenridge, 12565 West Center Road, Omaha, NE 68144, (402) 697-2577, e-mail: jeff.l.breckenridge@usace.army.mil **PWD**

Jeff Breckenridge is an Innovative Technology Advocate at the USACE Hazardous, Toxic and Radioactive Waste, Center of Expertise (HTRW-CX) in Omaha, Nebraska.



ECAS improves Army compliance, saves costs

by Neal Snyder

In the 10 years since the Environmental Compliance Assessment System (ECAS) became mandatory for Army installations worldwide, attitudes toward the triennial evaluation have shifted, according to Matthew Andrews, ECAS program manager for the U.S. Army Environmental Center (USAEC).

ECAS brings a team of outside experts to an Army post to examine operations and programs for possible violations of federal, Department of Defense, Army, state and local environmental regulations.

"At first installations looked at ECAS as a 'black hat' inspection," Andrews said. "As we found the deficiencies, and gave good advice on how to fix them to avoid violations, installation commanders started to see it as a real 'white hat' program."

ECAS got its "good guy" reputation by saving potentially hundreds of thousands of dollars in fines and remediation costs every time its experts come onto an installation, according to Andrews.

With USAEC oversight and assistance, each major Army command (MACOM) implements the ECAS program in its own way. USAEC sets forth the format for ECAS and tracks the results across the entire Army, but the focus is on helping each installation improve its environmental program. The installation and MACOM develop an Installation Corrective Action Plan (ICAP) to address the deficiencies identified during the ECAS visit.

For example, in fiscal 1997, an ECAS team assessor evaluating Fort Gordon's air program identified that the Georgia installation had not applied for a Clean Air Act Title V air permit—a violation of state regulations. A team from the Training and Doctrine Command (TRADOC) helped Fort Gordon complete the permit application in two weeks.

During the same fiscal year, ECAS assessors found two potential violations in Fort Knox's wastewater system.

TRADOC again sent a team—the command's water program manager and a technical expert from the U.S. Army Center for Health Promotion and Preventive Medicine—to Kentucky. They met with installation and state officials for a week to resolve the issues. Results like that earned ECAS the specific endorsement of GEN Dennis J. Reimer, then chief of staff of the Army, in 1999, Andrews said.

"As attitudes toward ECAS have evolved, so has the program."

When the idea of eliminating ECAS as a cost-cutting measure surfaced, installation commanders almost unanimously came out in favor of preserving the program.

As attitudes toward ECAS have evolved, so has the program. Fiscal 1999 marked the beginning of the third cycle of ECAS assessments. Beginning this year, ECAS inspections will put more emphasis on finding the "root cause" for systemic violations.

In addition, MACOMs are examining ways to increase the frequency of

inspections for installations most likely to have compliance problems and decrease the frequency for those at lower risk of enforcement activity.

Each ECAS inspection results in a detailed report on the condition of the installation that goes to both the installation commander and the MACOM. In addition, the course of action required to fix any noncompliant situation is detailed in the ICAP designed in consultation with the ECAS experts.

ECAS remains the Army's best tool to find those potential compliance violations—and preserve Army funds for their real purpose: keeping soldiers ready to fight.

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Neal Snyder is the USAEC Web Manager and a senior planning specialist with J.M. Waller Associates, Inc.

Editor's Note: Susan Phelps, an ORISE fellow in the USAEC Environmental Quality Division, contributed to this article.

Slick tip: Recycle oil to preserve resources

by Wendy Gross

With the rapidly rising prices of gasoline, it is becoming more and more important to conserve oil. One way to accomplish this is to recycle it.

Tobyhanna Army Depot has seven oil "igloos," located throughout various areas, that are used to collect used oil. They are similar to the bright yellow happy face bins that collect soda cans except that they are brown.

Various activities on post generate oils of many varieties. Only petroleum-based oils are collected, and a contractor comes and pumps out these igloos. The contractor carefully

monitors the content of each oil igloo. Material other than oil will contaminate his entire load, forcing the depot to reimburse the contractor for disposal costs.

Employees are reminded to be sure to pour only petroleum-based oils in the igloos. Depot employees are also welcome to bring in used oil from home to place in a designated igloo. However, they must not leave containers outside the door—that is considered dumping, and they must take the empty containers home with them. **PWD**



Army Solid Waste and Recycling Program update

by William F. Eng

Army's solid waste and recycling programs have undergone a number of changes over the past few years.

Some were very significant in the way Army and the Department of Defense (DoD) do business, while others might have been lost in the hectic frenzy that passes for life at the installation Public Works, Environmental Offices, or wherever the management of solid waste and recycling programs resides.

Would you be surprised to learn that during FY 95-97 the Environmental Compliance Assessment System (ECAS) found that over 60 percent of the negative findings of the Army's Solid Waste Program were Class 1 findings and consisted of recycling, landfills, solid waste storage, and open dumping? (Class 1 means violation of Federal or state regulations.) These deficiencies included open dumping, waste piles without a permit, unpermitted construction and demolition (C&D) disposal sites, excluded wastes disposed of in the landfill, undefined landfill leachate, and munitions found in the solid waste stream.

On the plus side, there were positive findings on recycling where the emphasis was on involvement of the public, recognition for good recycling efforts, management of collection points, and the development of written guidance. Finally, while no direct correlation could be proven between negative findings and the documented lack of an Integrated Solid Waste Management (ISWM) plan, ECAS did find that installations without an ISWM plan had deficiencies that could have been corrected through the development and implementation of a management plan.

Meeting goals

In May 1995, the Office of the Under Secretary of Defense (Environmental Security) (DUSD (ES)) put into effect a wide range of measures of merit to define goals and measure how well the goals are being met in six functional areas. Pollution prevention, one of the six functional areas, includes non-hazardous solid waste and recycling. The MoM, as a measure of merit is com-

monly called, covering non-hazardous solid wastes was in two parts:

- By 1999, reduce the amount of non-hazardous solid waste disposed in landfills or incinerators by 50% from a 1992 baseline.
- By 1999, recycle 50% of the non-hazardous solid waste generated, using 1992 as a baseline.

By 1998, when DoD had already met the original recycling MoMs for non-hazardous solid wastes and had made substantial progress towards reducing the amount disposed, DUSD (ES) established a new MoM. The new "Non-Hazardous Solid Waste Diversion Rate" MoM, which recognizes that more than recycling will be required to divert greater amounts of solid wastes from being disposed in landfills or incinerators, is:

- By the end of FY 2005, ensure the diversion rate for non-hazardous solid waste is greater than 40%, while ensuring integrated non-hazardous solid waste management programs provide an economic benefit when compared with disposal using landfilling and incineration alone.

The complete non-hazardous solid wastes MoM is available on the DENIX web site at <http://www.denix.osd.mil/denix/Public/ES-Programs/Pollution/Moms/p2mom.html>

Management of Construction and Demolition

Management of Construction and Demolition (C&D) Debris is becoming a major solid waste issue in the United States. While the exact amount of

C&D wastes generated in the U.S. is uncertain, a range of 80 to 120 million tons per year has been widely accepted. Compare this to the 208 million tons of municipal solid waste that is disposed of annually and the dimensions of the problem become clear.

For the Army, due to the various rounds of the Base Realignment and Closure (BRAC) program and downsizing in general, the potential volume of C&D wastes to be managed is formidable.

Added to this is the ambitious schedule for the removal of over 53 million square feet of excess building space by FY 2003 in accordance with the May 1998 Defense Reform Initiative Directive # 36, Disposal/Demolition of Excess Structures.

An Army policy for managing C&D wastes is being drafted to

address not only this one-time effort under DRID #36, but also the everyday business of new major construction and routine rehabilitation and renovation work that goes on daily at Army installations.

As a direct result of a decision not to publish the Army's Annual Summary of Operations for the Directorates of Public Works, also known as the "Red Book" after the 1997 edition, an alternative solid waste reporting mechanism had to be found. Fortunately, this coincided with the roll out of the Solid Waste Annual Report (SWAR) system (see p.27) by the Defense Environmental Security Corporate Information Management (DESCIM). Fielded in June 1998 by the ACSIM, SWAR was to be implemented in January 1999.

Transitioning problems at various MACOMS have prevented the production of a report from SWAR that represents the full and complete Army solid waste and recycling program. By requesting interim quarterly reports for the rest of FY 00, the ACSIM is enforcing discipline onto SWAR users





and the report for entire FY 00 is expected to be a great improvement. The SWAR program includes a feature that automatically calculates how well the installation, MACOM, or the Army is meeting the new DoD MoM.

Need for training

With the advent of direct sales authority at the installation level and the inclusion of fired brass and firing range gleanings as authorized materials for recycling, the need for more and better training became evident. Training is now or will be available shortly covering AEDA Recognition, SWARs, Affirmative Procurement, and QRP Management and Operations. A comprehensive recycling educational experience is being offered at the annual DoD Recycling Workshop, which is again being held in conjunction with the National Recycling Coalition (NRC), Charlotte, North Carolina, September 10–13, 2000. For more information, check the ACSIM web site: <http://www.hqda.army.mil/acsimweb/fd/policy/default.htm>

Programs:

Integrated Solid Waste Management (ISWM)

Prior to the 1970s, there was little thought given to the management of solid waste, except as accumulations of materials of unknown value that fluctuated by quantity and content over time and location, which had to be removed and disposed of in the most economic way possible, without causing a nuisance. Gradually, thinking and technology shifted to where the “waste stream” was seen as a potential resource from which materials or varying values could be recovered for re-use and recycling.

It is highly unlikely that the ideal of “zero discharge would ever be realized, when it comes to the municipal-types of solid wastes and the construction and demolition (C&D) debris generated on Army installations. Various programs, such as waste reduction, affirmative procurement, re-use, recycling, yard waste composting, and C&D recycling are some of the tools the Army needs to use to meet the latest DoD Measures of Merit (MOM) of a 40% diversion rate from the solid waste stream.

In the mid-1990s, the US Environmental Protection Agency espoused a concept called “Integrated Solid Waste Management.” The Army’s solid waste policy, published in Chapter 3 of Army Regulation 420-49, adopts that concept which calls for installations to develop and implement ISWM plans, which look at the continuum in the life-cycle of “stuff” that becomes solid waste. An ISWMP is designed to minimize the initial generation of the materials through source reduction, then re-using or recycling— includes composting— to further cut the volume of materials going to landfills or incineration, and disposing in landfills or incinerators only that which could not be eliminated, re-used or recycled.

Another compelling reason for having ISWMPs is the FY 95-97 ECAS finding that the lack of management plans was one of the bigger non-compliance problems facing Army solid waste programs today. ECAS concluded that installations that did not have an ISWM plan had deficiencies that could have been corrected through the development and implementation of a good management plan.

Installations can get assistance in preparing an ISWMP from a number of sources, including the U.S. Army Construction Research Laboratory (USACERL) and the U.S. Army Center for Health Promotion and Preventative Medicine (USACHPPM).

USACHPPM published a “Guide for Developing Integrated Solid Waste Management Plans at Army Installations” in December 1999, publication number TG197. The guide includes information on the topics of waste characterization, source reduction, recycling programs, composting, and refuse management, as well as promotion, training, record keeping, reporting, and contingency planning. To obtain a copy or request assistance, please contact Pat Rippey, (410) 436-5201, e-mail: Pat.Rippey@apg.amedd.army.mil or Beth Martin, (410) 436-5202, e-mail: Beth.Martin@apg.amedd.army.mil.

Qualified Recycling Program (QRP)

Years ago, when Executive Order (E.O.) 12780, Federal Agency Recycling and the Council on Federal Recycling and Procurement Policy, was issued on

31 October 1991, the Army published the “Installation Recycling Guide” to assist installations in the establishment and operation of QRPs. Two subsequent Executive Orders were issued on recycling – E.O. 12873, Federal Acquisition, Recycling and Waste Prevention, on 20 October 1993, and E.O. 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition, September 14, 1998.

DoD Instruction 4715.4, Pollution Prevention, issued on 18 June 1996, prescribes guidance for the preparation, coordination, and oversight for implementing a Qualified Recycling Program (QRP), in accordance with E.O. 12873 and other pertinent laws and regulations. The Combined Services Recycling Working Group, which represents all the Military Services, the Defense Logistics Agency, and the Office of the Deputy Under Secretary of Defense for Environmental Security (DUSD(ES)), agreed to develop unified implementation for the DoD for use by all Defense installations.

A DoD Guide was drafted under the authority of that Executive Order and the subsequent Executive Order 13101, Federal Acquisition, Recycling, and Waste Prevention, issued on September 14, 1998. The guide was to be a dynamic document, which would grow and change as modern technology and alternative solutions became available to DoD. It was to be a comprehensive guide for operating a QRP within any Service. Conflicts or clarifications were to be resolved by directing correspondence through the Military Department’s chain of command to the Chairman of the Pollution Prevention Committee at DUSD(ES).

The handbook was to apply to the Office of the Secretary of Defense (OSD), the Military Departments, the Chairman of the Joint Chiefs of Staff, the Defense Agencies, and the DoD Field Activities, often referred to collectively as “the DoD Components.” Heads of DoD Components could issue supplementary guidelines when necessary to provide for unique requirements within their organizations.

During review and staffing with the Office of the Secretary of Defense, it became clear that the draft guide, intended for use at the installation level, was too detailed and directive in nature





for publication as a DoD document, and so better left for the Services to issue.

Much time has been lost in the drafting, reviewing and subsequent administrative staffing of this sorely needed guidance. The Army plans to update the original "DoD" draft to incorporate the latest policies, as well as take advantage of both Navy- and Air Force-specific documents, to produce an Army-version which contains the best of all available information. Publication is expected in the first quarter of FY 01. Army solid waste and recycling policies on the ACSIM homepage at <http://www.hqda.army.mil/acsimweb/fd/policy/facengrec.htm> are currently under revision.

In the interim, you may wish to consult the Air Force Center for Environmental Excellence web site: <http://www.afcee.brooks.af.mil/eq/programs/summary.asp?SUMMARY=RRRP+Guide> or the Navy Recycling Program <http://www.navyrecycling.com/documents/index.html>

Construction & Demolition Waste Management – Habitat for Humanity Initiative

As stated earlier, the Army has over 53 million square feet of excess building space that have to be demolished because of the Defense Reform Initiative Directive. C&D wastes are a significant portion, perhaps 30 to 40%, of the municipal solid waste stream which have been basically ignored. The Army is beginning to address this challenge as it dovetails with the DoD MOM to divert at least 40% of the non-hazardous solid waste generated each year, by the end of FY 2005. The policy will be issued later this year.

The Army needs to focus on the management of solid waste generated during construction and demolition projects. The policy is to minimize the amount of non-hazardous solid waste disposed of through landfills or incinerators, and to promote more efficient use of materials during construction. It will require that materials removed from demolished Army structures and waste materials generated during new construction, are either salvaged for resale, reused on site, or recycled in lieu

Become familiar with environmental laws at unfamiliar work sites

by Leigh Tooley

Everyone has heard the old adage, "The only dumb question is the one not asked." This holds especially true when it comes to your personal safety and compliance with environmental laws when transferring to a new work area or on a temporary duty (TDY) assignment.

Tobyhanna Army Depot strives to comply with all safety and environmental training laws, but structured training courses cannot always impart all the information you need to know when you enter a new work environment.

Two standards—Hazard Communication (HAZCOM) and Hazardous Waste Operations and Emergency Response (HAZWOPER)—require some site-specific training or information.

If you transfer to a new work area, your new supervisor will provide you with any relevant HAZCOM and HAZWOPER information. But in the case of TDY assignments, you might find yourself having to ask questions to get the information you need to protect yourself from hazards and comply with environmental laws.

For example, before you begin work at a TDY site, you might want to ask:

- How would you report an emergency (i.e., medical-related incident, fire or environmental concern)?
- If working in an unfamiliar building, what is the evacuation plan?
- Will the work be conducted in a high-noise area?
- How and where does the host want you to store hazardous materials and waste?
- How does the host want you to dispose of empty containers that previously held hazardous products?
- If working in shelters, are they known or suspected to contain asbestos that might be disturbed in the course of your work?
- Does the host require copies of Material Safety Data Sheets (MSDS) for products that you plan on using at the site, and do you need to report the quantity you used?

There are no "dumb questions" regarding these important laws designed to protect your health and safety. **PWD**

Leigh Tooley is an Environmental Protection Assistant in the Environmental Management Division at Tobyhanna Army Depot.

of being disposed of in a landfill or incinerator, where economically feasible and to the extent practical.

A potential partnership is being worked with Habitat for Humanity (HfH), the international non-profit organization that helps low-income people construct their own homes, using a combination of donated materials, volunteer labor and "sweat equity." The partnership would leave most actual decisions at a local level where installations would work with HfH local affiliates. These affiliates also operate a growing number of Habitat ReStores, which sell reusable and surplus building materials, with proceeds funding local Habitat house construction.

On the one hand, there are a number of issues involved with this partnership with HfH, including potential environmental risks—such as, lead-based paints and asbestos—and long-term liability associated with the use of salvaged materials. On the other, it may lead to a low-cost, community-center long-term solution to C&D waste management. Not to be overlooked, the McKinny Act governs reuse of excess real property.

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Pharmacies serve to manage hazardous materials

by Mike Parrent



Material Sorter Bob Watkins, an employee of Tobyhanna Army Depot's Automated Storage and Retrieval System Division, weighs out hazardous material at one of the depot's Hazardous Materials Pharmacies. When employees are done with the material, whether it is used up or not, the container must be returned to the pharmacy.

Tobyhanna Army Depot is increasing the utilization of the Hazardous Materials (HazMat) Pharmacy concept to assist management of hazardous materials.

Pharmacy is a fancy name for distribution point. Hazardous Materials Pharmacies are also called Hazardous Distribution Supply Centers (HDSCs).

Used in conjunction with the Hazardous Material Management System (HMMS), HazMat pharmacies allow Tobyhanna to track who is using what hazardous material and how much of that material is left over. The material can be tracked to the disposal point. The HMMS database is used to issue material and turn in partial or empty containers to a pharmacy.

Hazardous material is delivered in

bulk to the pharmacies. Basically, individuals requiring material can get what they need for an 8-hour work shift. When a job is done, the material is returned to the pharmacy. However, if the job requires more than one day to finish, the hazardous material may be kept at the work site if the container is small enough.

The pharmacies are located in several areas. It is very important that empty containers be returned to a pharmacy. This will show that the individual used all or some of the material and is no longer responsible for the container. Partial containers can be reissued to other users.

Another way of explaining it is that hazardous materials will be issued on an exchange basis. For example, if a can of

silicone lubricant is already checked out, the empty can must be returned to be issued another one. This helps ensure all empty containers are properly disposed.

Aerosol cans are treated differently. All aerosol cans will be punctured, drained and sent for recycling with other empty metal containers.

To complete implementation of the HazMat Pharmacy, coordination with shops personnel is required. The depot's Environmental Management Division personnel are now working with shops personnel to identify which materials, and what amounts, should be kept at each supporting pharmacy.

Finally, materials that are expired or no longer needed will be turned in to the Defense Reutilization and Marketing Office, a tenant activity located at Tobyhanna, or utilized by another shop, if possible.

Once the HazMat pharmacy system is fully implemented, most shops will get their hazardous materials from the nearest pharmacy.

Following these procedures will not only help the depot comply with environmental regulations, but also ensure the most prudent use of hazardous materials and help the depot's competitive posture.

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Mike Parrent is the Pollution Prevention Program Manager for the Environmental Management Division at Tobyhanna Army Depot.

POL-DX services

With the recently designated Fueling Systems Center of Expertise (POL-DX), support is easily available to MACOMS and/or installations, for guidance, programming, review/design, construction inspection support, and acceptance testing support services for high volume fueling systems (typically 35 gpm up to 1,200 gpm per outlet location). These systems include truck off-load facilities, fuel storage, truck fill stands, containment, dispensing outlets, etc. The team, located in the Omaha District Corps of Engineers, has supported many Major Commands (HQ AMC-Air Force, HQ AFMC, HQ DLA, HQ ACC-Air Force, HQ DESC (Previously DFSC), HQ AFCESA-Tyndell Air Force Base, HQ AETC-Air Force, and TRADOC) and other design agencies during recent years. For further information, please access the POL-DX Web Site at: <http://www.now.usace.mil/html/pm/POLCX.htm>

Omaha's Fuel Team is ready to serve your fuel system's needs by providing technical expertise, on fuels systems, for a reimbursable fee. All that is needed is a MIPR, for the effort/services requested. If you need further information or have questions, please contact Jimmy Brasch at (402) 221-4916 or Joe Pesek at (402) 221-3061 or by e-mail through the web site.

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Do you need a Clean Air Act permit-to-construct?

by Sandra Frye

One does not immediately think of Clean Air Act (CAA) construction permits when considering design and construct activities for office buildings, hospitals or other administrative support buildings or structures. However, failure to adequately evaluate the need for such permits can, in certain situations, result in significant and costly project delays.

The CAA contains provisions requiring that all new sources and major modifications to existing sources undergo a review prior to construction if their projected emissions exceed specific threshold criteria. The review is done by the implementing agency to ensure that air emissions from the new source do not adversely impact air quality in the Air Quality Control Region in which the new source is located. Upon review approval, the source is issued a permit-to-construct. Construction of the new source cannot commence until the permit is issued to the owner/operator of the source. Commencement of construction is generally considered to occur when "dirt is moved." In other words, foundation work cannot begin without the permit being in place. A CAA permit-to-construct can take as long as six months to a year to obtain.

A recent project for the construction of a new medical facility encountered

difficulties related to CAA permit-to-construct requirements. The project was in the final design stages when the question regarding air permits was raised. The project included the installation of three emergency standby generators for power and three emergency standby boilers for heat. Heat and power under normal conditions were to be supplied from external utility sources.

In determining the need to obtain CAA construction permits, the EPA requires the source to determine its potential-to-emit (PTE) air pollutants. PTE values are based upon the assumption that the air emission units will operate at maximum capacity for 24 hours per day, 365 days per year unless there are existing enforceable limits on operation. This equates to an operation time of 8760 hours per year and is known as the PTE "8760 rule." However, EPA policy regarding emergency equipment is to not apply the 8760 rule, but rather to have owners/operators of emergency equipment calculate PTE values using 500 hours per year.

Under current EPA Federal guidelines for assuming 500 hours per year operation, the emergency equipment at the medical facility would not have required a construction permit. However, the state in which the project was

located had not adopted EPA's policy on emergency equipment. The state requires emergency equipment operating within their boundaries to apply the 8760 rule in determining the need to obtain construction permits. Under the CAA, states are granted implementation and enforcement authority for CAA regulations upon being granted approval from EPA. State requirements must be at least as stringent as the Federal requirements and are allowed to be more stringent.

For the medical facility project, the state had both obtained approval from EPA to implement and enforce the permitting program and had established more stringent requirement (i.e., applying the 8760 rule to emergency standby equipment) in determining how to calculate PTE values. PTE values were calculated for the emergency generators and boilers using the state required 8760 hours of operation per year. The resulting emissions exceeded thresholds triggering permit requirements.

Due to prompt and timely response by project personnel at the installation, the required permit-to-construct will most likely be obtained without resulting in any project delays. However, had project personnel not considered the need to obtain Clean Air Act construction permits, the project could have experienced costly delays or received a notice of violation from the state and potential fines and penalties.

It is critical that CAA permitting requirements be identified as early as possible in any construction project. The permitting process frequently involves complex and costly air quality modeling efforts just to complete the permit application. Once the permit application is submitted to the implementing agency, it can take up to a year to receive the permit-to-construct. When evaluating the need to obtain CAA permits, it is vital that personnel are familiar with state specific requirements that may be more stringent than Federal requirements. Early identification of CAA permitting requirements can prevent costly project delays and potential violations and fines for the installation.

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Moving toward site closeout — a resource list

Site Closeout

Site closeout is achieving the “walk away goal,” or final condition of a site, as envisioned by the customer. Site closeout represents achieving either an interim final condition (e.g., expedited removal, remediation with 5-year reviews) or final completion of all work at a site.

If you are on a project team involved in an environmental restoration under the many programs (RCRA, CERCLA, BRAC, DERP, IRP, FUDS, State Voluntary Cleanup), it is important to develop an effective site closeout statement after considering future land use of the site; identifying the site’s regulatory compliance status and issues; and meeting the customer’s criteria and preferences for the final condition of the site. Many times, providing comprehensive project planning and guidance ensures effective and efficient progress to site closeout within all project constraints.

A good definition of site closeout enables focused planning and site activities from the current site status and condition through any necessary remediation; operation and maintenance; or monitoring efforts. Site closeout is a “process” not an endpoint. EPA’s guidance: “Close Out Procedures for National Priorities List Sites,” OSWER Directive 9320.2-09A-P, January 2000, offers comprehensive guidance and describes the process for accomplishing remedial action completion, construction completions, and site deletion for final National Priorities List sites. EPA also addresses the process for partial deletion of sites and provides recommended format and content for close out documents.

The documents referenced by this guidance are Remedial Action Reports (Interim and Final), Preliminary Close Out Reports, Final Close Out Report, Notice of Intent to Delete, Local Notice of Intent to Delete, Notice of Deletion, Partial Site Deletion Data Collection Form, Notice of Intent of Partial Deletion, and Notice of Partial Deletion.

by Johnette Shockley

Another excellent resource for closure guidance is the Air Force Base Conversion Agency’s web site. The purpose of this site is to provide a single reference point for all guidance, documentation, news, tools, and knowledge-sharing related to the site closeout process. Users should be provided with a clearer path toward risk-protective, cost-effective site closeout.

After the Remediation Is Complete

Documentation of the remediation is not only a requirement, but also an excellent resource for process improvement for the next time the technology or process is used. It also provides a baseline of information for conducting recurring or five-year reviews. Closure documentation also provides a final checkpoint to ensure everything has been saved and an opportunity for the project team to review how the project proceeded.

The results should be consolidated into a concise “post mortem” or “sunset report” which typically can be specified by the site regulatory requirements. This type of evaluation also increases the availability of standard cost and performance data on remediation technologies. The information may facilitate comparison and help improve future remedy selections by increasing the baseline of information that can be used as a benchmark in evaluating the feasibility of future technology selections.

The evaluation process provides a framework for streamlining future corrective actions, data collection and reporting efforts. Every person who participated in the project should be interviewed by an objective party (typically someone who wasn’t part of the project) to learn what things worked well and what didn’t.

Additional information on site closeout is available at the following web sites:

Close Out Procedures for National Priorities List Sites OSWER Directive 9320.2-09A-P, January 2000, <http://www.epa.gov/oerrpage/superfund/resources/closeout/index.htm>

- Air Force Base Conversion Agency <http://www.afbca.hq.af.mil/closeout/>
- Base Realignment and Closure (BRAC) Environmental Cleanup <http://www.dtic.mil/envirodod/brac/index.html>
- U.S. Army Base Realignment and Closure Web Site <http://www.hqda.army.mil/acsimweb/brac/braco.htm>
- EPA Federal Facilities Restoration & Reuse Office <http://www.epa.gov/swerfftr/>
- Federal Remediation Technologies Roundtable <http://www.frtr.gov/cost>
- Association of State and Territorial Solid Waste Management Officials <http://www.astswmo.org>

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Range cleanup of ordnance and explosives tops Corps list of priorities

by Angela Dixon



A typical pile of scrap metal at a military range.

The Department of Defense has active military ranges throughout the country that soldiers use for training purposes. Unexploded ordnance and range residue (scrap) materials ranging from small caliber ammunition to large caliber tank ammunition, trucks, tanks and other targets often remain at the site. Cleanup of these ranges is essential to maintaining military readiness because piles of range residue can significantly impact training on the ranges.

According to Glenn Earhart, the business development manager for the Ordnance and Explosives Directorate at the Huntsville Center, the Corps has an important role in assisting the Army in sustaining the Department of Defense's ranges. "The Corps of Engineers, including the Corps headquarters, divisions and labs, the Huntsville and Omaha Mandatory Centers of Expertise and the Corps districts have the expertise to assist in cleanup of active and closed, transferred and transferring ranges," Earhart said. "We are currently involved in many of these types of ordnance projects," he said.

What is the importance of removing range residue and unexploded ordnance from ranges?

According to Earhart, there are several important reasons. First and prob-

ably most important is the need to sustain range readiness. "Soldiers must be able to continually use the ranges for target practice," Earhart said. "There is now a Department of Defense directive that requires installations to conduct long range planning which includes everything from firing to cleanup to ensure range sustainability. It makes good sense and makes the military a good neighbor," he said. The Corps of Engineers is committed to supporting the total Army including its training missions.

Second, there is the issue of safety. In 1997, in a recycling yard in Fontana, California, a salvage worker was killed when he unknowingly cut into a live round. "Scrap is moved, sold and recycled by various entities; therefore, it must free of explosive material," Earhart said. "We need to make sure this does not happen again. Safety is a paramount concern that cannot be compromised."

Finally, the concerns raised by the environmental community suggest that ordnance left on the ranges have potential to contaminate ground water and soil. One example is the Massachusetts Military Reservation (MRR). The MMR is a National Guard facility and a former range used by the Army and Air Force. The Environmental Protection

Agency (EPA) conducted a study and found lead contamination in the groundwater. The range is temporarily closed and the Department of Defense is conducting extensive studies and clean-up operations at the site. The National Guard requested the Corps of Engineers assist in those operations.

One example of projects supported by the Corps of Engineers is the range clearance and scrap certification and disposal underway at Fort Irwin, California. Another is a range clearance project at Fort Drum, New York.

The Corps of Engineers has cradle-to-grave capabilities for all aspects of ordnance related issues on installations. The \$50 million dollar program to clean up Formerly Used Defense (FUDS) and Base Closure and Realignment and Closure sites (BRAC) is a total Corps of Engineers program that supports the Chief of Engineers "One Door to the Corps" vision on closed, transferred and transferring ranges.

For more information, please contact Glenn Earhart, Business Development Manager, at (256) 895-1577 DSN 760, e-mail: glenn.h.earhart@hnd01.usace.army.mil **PWD**

Angela Dixon is an editor at the U.S. Army Engineering and Support Center, Huntsville.



MDW in vanguard of federal energy plan

by Erica Levi

An energy-saving initiative involving the U.S. Army Military District of Washington has become the poster child of a presidential executive order to reduce energy consumption.

Working with partners in and outside of government, MDW has assured itself \$65 million worth of energy infrastructure upgrades at no cost to itself or the taxpayer, according to its deputy chief of staff for engineering and housing, COL Mark Vincent.

"We're getting \$65 million worth of improvements," Vincent emphasized. "That's \$65 million we don't have in our budget right now."

President Bill Clinton was speaking of the MDW "Energy-Savings Performance Contract," or ESPC, June 3, when he announced at a White House press conference the Defense Department will award this month "the largest energy-saving contract in the history of the federal government."

MDW, in connection with the Defense Logistics Agency's Defense Energy Support Center (DESC), plans to sign a contract with Viron Energy Services/Pepeco Energy Services to upgrade the energy performance on MDW's five military installations in the Washington, D.C., area.

Vincent said the contract is a key part of the command's strategic plan to reduce energy consumption by 35 percent from 1985 levels by 2010. Similar gains being sought throughout the federal government coincide with the nation's effort to reduce hydrocarbon emissions, as called for by international conventions on global warming.

"This [the ESPC] is an opportunity to reduce energy [use] by introducing more energy efficient devices, along with improved management controls."

Viron/Pepeco will invest over \$65 million to upgrade the energy performance of 837 buildings on MDW installations in the National Capital Region. The ESPC by itself will reduce energy consumption by 17 percent. The money saved will pay for the upgrades and reduce greenhouse gas emissions by 24,000 metric tons of carbon each year, according to information supplied by Vincent.

Forts Belvoir, A.P. Hill, Myer, McNair and Meade will be the beneficiaries of new heating, ventilating and air-conditioning systems. The improvements will be made in both home and office environments.

"So, what we can expect is greater reliability," Vincent added. "We are going to have fewer times that a building will require maintenance or repair, because many older components will be replaced."

In his Rose Garden statement, Clinton mentioned ways in which the federal government, private companies and the American people can all benefit from an agreement to combat environmental concerns.

"Under this contract, the government pays no up-front costs, the contractor wins a share of the energy savings, greenhouse pollution is reduced, and taxpayers will save over \$200 million," Clinton said.

Clinton said he was pleased to report that the government is increasing its involvement in environmental issues.

"As the single largest consumer of energy in our country, the federal government should be leading the way," he said.

The new executive order, titled "Greening the Government through Efficient Energy Management," sets goals for federal agencies to meet in reducing greenhouse gas emissions and achieving efficiencies in facilities energy consumption. The order mandates maximum use of "alternative" financing mechanisms, like ESPCs and utility energy-efficiency service contracts. These "provide significant opportunities for making federal facilities more energy efficient at no net cost to the government," the EO states.

Under ESPCs, the EO explains, the burden of installation, testing, maintenance and repair of the new energy-saving equipment is on the contractor.

The contractor has three years to perform the initial upgrades, and then operate and maintain the equipment for

the next 15 years. During that time the contractor will be reimbursed by MDW with a share of the energy and maintenance cost savings which will exceed \$200 million.

"The project has been tremendous team effort by the participating installations MDW, DESC, and our supporting consultants," said Vincent. The partnership, a will benefit all the participants. Ralph Gibson, one of MDW's point persons from the Installations Support Division of DCSEH, agreed the contract would benefit all parties. "We totally expect this to be a partnership with our contractor and our contracting agency," Gibson said. "It's a win-win-win situation."

Ali Darvishian, also of the Installation Support Division, said he and Gibson introduced the ESPC concept to MDW three years ago and initiated the process that has led to the imminent contract.

"The DESC needed someone to champion this," Darvishian said. "And, I think we did it."

As the millennium approaches, MDW will begin to see energy efficiency sure take effect. These include cooling system, air handling equipment and lighting retrofits, as well as central-heating-plant and central-cooling-plant upgrades.

Sharon Murphy, director of the Energy Enterprise Office in the DESC, said those who live and work on the installations would reap the quality-of-life benefits from the improvements made.

"The Army folks at the base level will have improvements in equipment, in their facilities, lighting, air conditioning," Murphy said. "Besides reducing costs, they'll benefit from the actual upgrades themselves." Vincent said the upgrades and changes would be made with as little a disturbance as possible.

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Erica Levi is a student at the S.I. Newhouse School of Public Communications at Syracuse University working during the summer at the Military District of Washington Public Affairs Office for the MDW News Service.



Employees' recycling efforts positively impact Tobyhanna Army Depot, community

by C.J. Penwell



The depot's recycling program helps fund Morale, Welfare and Recreation activities, such as the annual Employee Appreciation Day, when employees get to enjoy a fun-filled afternoon of food, beverages, games, prizes and musical entertainment.

Tobyhanna Army Depot's Recycling Program has become very successful in reducing the amount of municipal solid waste being sent to a landfill.

Not only is recycling the right thing to do for the environment, but it also benefits the depot mission.

Did you know...?

- A ton of paper made from 100 percent recycled paper saves the equivalent of:
 - 17 pulp trees.
 - 4,100 kilowatt hours of energy.
 - 60 pounds of air emissions.
- Reusing one ton of paper will:
 - Save enough energy to heat an average home for six months.
 - Save 7,000 gallons of water.
 - Save 380 gallons of oil.
- The tin cans thrown away every day in the United States could continuously supply all our nation's auto makers.
- Americans throw away enough aluminum cans every three months to rebuild the entire U.S. commercial air fleet. **PWD**

During Fiscal Year 1999, Tobyhanna recycled 83 percent of the solid waste stream by collecting over 16.6 million pounds of material. This conserved the use of 45,230 cubic yards of landfill space and reduced refuse removal and disposal costs by \$732,562. Income generated from the sale of recyclable material amounted to \$147,318.

Recycling funds can be spent several different ways. All operating expenses, such as wages, materials or equipment, must be deducted from the Recycling Program account first. Up to 50 percent of the remaining balance may be spent for pollution abatement, energy conservation or occupational safety-related projects. Funds may also be transferred to the installation Morale Welfare and Recreation account.

Some of the projects completed from funds generated by the Recycling Program include the annual Employee Appreciation Day Picnic, Christmas decorations and a display cabinet.

The depot's Recycling Program also helps the local township. In accordance with Pennsylvania Act 101, which requires all communities within the Commonwealth to recycle, the depot reports the tonnage of recyclable material collected by its program to the local township. The township can use this

tonnage to earn additional recycling performance grants towards operating and improving the township's Recycling Program.

Employees' support and willingness to participate in the program are responsible for the success of recycling at the depot. This effort has been rewarded with the depot winning many regional, state and national awards, such as the Pocono Northeast Community Award for 1995; the Secretary of the Army Environmental Award for 1994, 1995, 1996, 1997 and 1998; as well as the Pocono Mountains Chamber of Commerce Save Our Planet Award for 1997.

Depot employees are encouraged to keep separating computer paper, office paper, newspapers and magazines, and place them in the proper containers. This will ensure the continued success of the program to the benefit of the mission, the environment and all depot employees.

POC is C.J. Penwell, (570) 895-7298, e-mail: cpenwell@tobyhanna.army.mil **PWD**

C.J. Penwell is an Environmental Protection Specialist in the Environmental Management Division at Tobyhanna Army Depot.



ISTD — Your source for environmental awareness products and services

by Mary Hodgens

For installation or activity-specific awareness products, the Installation Support Training Division's Environmental Awareness Resource Center is here to support you with design and development. We can design custom products or modify existing ones that we have on hand. Some examples of our products are posters, pamphlets, videotapes, field cards, job aids, and exportable training courses— just send us your request and we will provide samples.

When you need environmental awareness products or assistance with environmental training, call on us. We help Army and DOD personnel at all levels identify environmental training problems, formulate solutions, and develop awareness products. Our primary mission is to support the right product/right time approach to development and distribution of non-classroom based environmental awareness and training products as stated in DA PAM 200-1.

Our center has environmental professionals and instructional systems specialists to answer your questions and handle

inquiries. We can search our database of environmental information and materials to aid you with specific questions and help you find appropriate products for your environmental training programs.

We also publish the *Tools Catalog* under the sanction of the Interservice Environmental Education Review Board (ISEERB). This catalog is a database of information on environmental courses, ISEERB approved courses, awareness products, and DOD common tasks. Through this catalog, we provide information on all types of courses such as formal classroom training, college courses, and self-study programs. We can search for courses on environmental-specific areas, course providers, and other keywords or phrases. The *Tools Catalog* will be available on the Internet very soon!

If you need a baseline task list for developing a course on any of the twenty-four environmental programs areas, contact us. We will provide a copy of the *Department of Defense (DOD) Environmental Common Task List*, developed by a

workgroup of representatives from all Services.

Army and DOD employees, if you need assistance with environmental awareness products and services, contact Gini Brown or one of the staff personnel at the ISTD for assistance. We are located at the Professional Development Support Center (PDSC), 550 Sparkman Drive, Huntsville, Alabama 35816. Organizationally, we are affiliated with the Army Corps of Engineers. Log on to our Web Site at <http://www.hnd.usace.army.mil/earc> for additional information.

Send mail to: Professional Development Support Center, ATTN: CEHR-P-ISTD, P.O. Box 1600, Huntsville, Alabama 35807-4301. For more information, please contact Gini Brown, (256) 895-7408 DSN 760, e-mail: Virginia.R.Brown@usace.army.mil or Nelda Rogers, (256) 895-7416 DSN 760, e-mail: nelda.rogers@usace.army.mil **PWD**

Mary Hodgens is an instructional systems specialist in Huntsville.

Hawaii Guard keeping 25 species on earth

by Gary Sheftick

The Hawaii Army National Guard is helping save a number of plant and wildlife species from becoming extinct.

One endangered plant species— Ohai— exists only on the island of Maui and only 13 known plants exist in the wild, said the Guard's field ecologist, Trae Menard. His group has worked to protect those plants and regenerate the original population by cultivating more than 1,200 domestic Ohai plants.

"All the plants we work with are native only to Hawaii," Menard said.

The Hawaii Army National Guard was recognized for helping protect 25 endangered or threatened species when presented with the Secretary of the Army Environmental Award for Natural Resources Conservation— Small Installation, in a Pentagon ceremony April 25.

Most of the endangered plants that Menard works with are found in high-elevation dry forests on the islands.

"Everyone talks about save the rain forests,"

Menard said, but explained that it's actually the dry forests in Hawaii that are "among the most endangered ecosystems in the world."

Menard said that "invasive species" such as weeds and insects from the mainland are the culprits that endanger Hawaii's forests. Goats are also a problem, he said. He explained that an overabundance of grazing goats can "decimate" native plants.

"Then alien grasses creep in ..." Menard said, explaining that many of these grasses are highly flammable. "Then fire wipes out the ecosystem."

The Hawaii National Guard has a group of high school students that pull weeds and help replant native plants on the command's seven training areas located across the five islands. The volunteers are known as YES— Youth for Environmental Service.

Menard's group locates endangered plants like the Ohai using the Global Positioning System and creates a training buffer around the

endangered species so they are not trampled.

In addition, the Hawaii National Guard is helping preserve two endangered birds native to island wetland areas— the Hawaiian Stilt and the Hawaiian Coot. Menard said his group is controlling rats because rats, cats and mongooses are the major predators for these birds. His group is also helping restore native plants that serve as a natural nesting habitat for the birds.

The Guard is helping preserve the Hawaiian Hoary Bat, a threatened species. Environmentalists are helping preserve the Aiea, a flowering tree which serves as a host plant for the bats.

The Hawaii Army National Guard is also working to help preserve the Manduca Black Burnii moth, Menard said, an insect newly listed as an endangered species. **PWD**

Gary Sheftick works for the Army News Service at the Pentagon.



Fort Meade Environmental Partnership: Army, EPA, and the Maryland Department of the Environment work together for success

by Leslie M. Hill

Partnering for Success!

Partnering for success! A new buzz phrase? Maybe, but partnering has been the key to success in the environmental restoration of the former Tipton Army Airfield and beneficial reuse of the property for civilian aviation. Many readers of this publication might find the partners to be oddly suited for a partnership – the Department of the Army, the U.S. Environmental Protection Agency, and the Maryland Department of the Environment.

Fort George G. Meade, located in Anne Arundel County, was identified for partial base closure in 1988. Prior to environmental restoration, a portion of the closed property was transferred to the U.S. Department of Interior for use as a wildlife refuge. The remaining property, known as Tipton Army Airfield, was designated for transfer to Anne Arundel County for use as a regional commercial airport. This transfer was complicated by the listing of Fort Meade on the EPA's National Priority List (NPL), or Superfund. Since the County wasn't interested in adding a Superfund property to its inventory, before the Army could transfer the property, that parcel had to be restored and removed from the Superfund List.

What is Partnering?

By now, you are probably asking yourself the question "What is partnering?" Partnering is "a process by which two or more organizations with shared interests act as a *team* to achieve mutually beneficial goals."¹ "Partners" in the environmental restoration process are often organizations that "in the past have worked at arm's length, or have even had competitive or adversarial relationships."²

Partnering is not a legally binding relationship, but a "commitment and agreement between the parties to:

- Participate in structured, facilitated team-building sessions and joint training to acquire the skills needed to work together as a team.
- Remove organizational impediments to open communication within the team, regardless of rank or organizational affiliation.
- Provide open and complete access to information (except as prohibited by law)
- Empower the working-level staff to resolve as many issues as possible.
- Reach decisions by consensus as much as possible, and when consensus is not possible, achieve resolution in a timely manner using an agreed-upon process for resolving disagreements.

- Take joint responsibility for maintaining and nurturing the partnership relationship."³

In the restoration of Tipton Airfield, the partners discussed above are the major stakeholders in the process. A key element of partnering is the realization that stakeholders can have different interests and responsibilities, but common goals developed by the team are essential. The goals established by the team were developed based on the primary interests of both regulatory agencies and the Army. The partnership's goals included timely and cost effective transfer of the airfield to the County while ensuring protection of human health and the environment. In addition to the stakeholders that are "voting" members of the team, the process also brings in guest members such as contractors, other federal or state agencies, and others effected by the work such as Anne Arundel County. During the Tipton Airfield project, a representative from the County Executive's office frequently attended team meetings. The community's link with the team is the Restoration Advisory Board (RAB) which receives monthly meeting summaries from the team as well as status briefings from the team at periodic RAB meetings.

The Process In Practice

The commitments and agreements that are the basic tenets of partnering have a profound effect on the functioning and progress of the team. Most important is the sense of project ownership by the entire team. All the members of the Fort Meade Environmental Partnership take personal responsibility for the success or failure of the team.

The structured partnering sessions lessen the impact of changing personnel on team performance. Despite several key players leaving the team in the past few years, the structured process prevented delays and kept the process moving.

Facilitated partnering is extremely beneficial to team development until the team is ready and sufficiently trained for self-facilitation. Initial team



Partnering Team pictured above with Senator Paul Sarbanes (D-MD) at a ceremony commemorating the removal of the former Tipton Army Airfield from the EPA's National Priority List, commonly referred to as Superfund, and opening of the airfield for commercial use under the Tipton Airport Authority, an organization established by Anne Arundel County.



meeting included a professional facilitator who directed meetings and ensured team members “played by the rules” established by the team.

The partnering system established at Fort Meade includes two tiers; Tier I, which includes the working level members who are empowered to make decisions for their agency, and Tier II, which includes stakeholder management personnel at least one level above the working level members. When a decision cannot be made by the working level, Tier II steps in and resolves the issue. The two-tiered system ensured higher management focus on the project throughout and prevented other work from taking focus away from Fort Meade.

Setting ground rules for discussion and for dispute resolution is key. Although it seems obvious that meetings are more efficient if only one person is talking at a time, I’m sure everyone has been part of meeting where there are more side-bars than general discussion. Meeting roles such as chair, timekeeper, and chart keeper are rotated among members of the team. This allows meetings to go smoother with more issues being resolved.

The process requires open and honest communication among the stakeholders, with no “hidden” agendas allowed. Team members to state their position on an issue regardless of whether that position is popular and clearly state when they do not have discretion on a particular issue. Team member’s positions are made clear without unnecessary conflict or adversarial posturing.

One of the most interesting things about team meetings was the switching of positions in discussions. While you would think members of the Army or regulatory community would always side together, individual team members often provide support to the arguments of the “other side.” Without the emphasis on open and honest communication, that probably wouldn’t happen.

Result

Partnering at Fort Meade has resulted in accelerated project completion and clean-up of contaminated sites. Before partnering was initiated at Fort Meade, the restoration process had stalled. Partnering keeps the restoration process moving and avoids impasses. The results of partnering at Fort Meade have been impressive. The team achieved the fastest Superfund de-listing ever— 16 months

Remediation system evaluations help to optimize systems

by Dave Becker and Lindsey K. Lien

The Remediation System Evaluation (RSE) process can help reduce operating costs substantially for long-term cleanups and help identify performance problems.

Developed by the U.S. Army Corps of Engineers (USACE) to identify cost savings and assure the protectiveness of remedies, the RSE process: recommends cost-saving changes in system operations or technologies applied at a site, verifies a reasonable closure strategy, and assesses maintenance of government-owned equipment.

Besides identifying potential cost savings, the RSE process serves as an extension of the CERCLA 5-year review process. The evaluation addresses protectiveness issues such as system performance relative to remedial action objectives, monitoring or operational deficiencies that may jeopardize a remedy’s protectiveness, and changes in surrounding land use or risk-based/regulatory cleanup standards.

The USACE Hazardous, Toxic, and Radioactive Waste Center of Expertise, with assistance from USACE district staff and other agency personnel, has applied the RSE process at three sites. The RSEs identified potential cost savings of \$80,000 to more than \$300,000 per year in operations and maintenance at each site. On average, each evaluation costs slightly under \$20,000 to conduct, including associated travel for a site visit and final report generation. The costs that may be incurred in addressing protectiveness issues, however, are not reflected in the aforementioned cost savings.

In order to assist the USACE district personnel and contractors in performing these RSEs, a suite of checklists was developed. These checklists address the overall system goals, subsurface performance, above-ground treatment effectiveness, and equip-

ment maintenance, and offer possible cost saving alternatives. The checklists are intended for use by experienced technical staff when conducting RSEs on a variety of long-term remedies, including pump and treat, soil vapor extraction, bioventing, and air sparging.

Over 20 RSE checklists are available. The checklists assist in assessment of subsurface system performance, aboveground treatment plant effectiveness, monitoring programs, and alternatives for treatment water discharge. Specific equipment that can be evaluated through the RSE checklists include air strippers, carbon adsorption systems, metals precipitation units, piping, pumps, blowers, control systems, solids handling systems, thermal treatment units, advanced oxidation processes, chemical feed systems, oil/water separators, and extraction/injection wells.

During site visits, the checklists are useful as mental prompts and a means to record observations, if desired.

The RSE checklists, a sample report, a sample scope of work, and an instruction guide are available on the Internet at <http://www.environmental.usace.army.mil/library/guide/rsechk/rsechk.html>.

For more information, please contact Dave Becker (USACE Hazardous, Toxic, and Radioactive Waste Center of Expertise), (402) 697-2655, e-mail: dave.j.becker@usace.army.mil or Lindsey K. Lien, (402) 697-2580, e-mail: lindsey.k.lien@usace.army.mil **PWD**

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from listing of Fort Meade to partial de-listing of the Tipton parcel! Since the completion of work on Tipton, the Fort Meade Environmental Partnership continues its work on restoration of the remainder of Fort Meade.

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Leslie M. Hill, P.E., is the Base Closure - Environmental Restoration Program Manager for the U.S. Army Corps of Engineers, Baltimore District.

¹ *Partnering Guide for Environmental Missions of the Air Force, Army, Navy 19* (Prepared by a Tri-Service Committee: Air Force, Army, Navy) (July 1996).

² *Id.*

³ *Id.*



Fort Meade— a tree city for the eighth time!

by Carol Cummings

Someone plants the seed of a good idea. Others nurture it. Everyone reaps the benefit.

The good idea in this case is the self-help tree planting program sponsored by the Fort George G. Meade Directorate of Public Works. It's a program that enriches all who live or work on the installation. And it will continue to contribute to the installation and the environment for decades—or perhaps centuries—to come.

"DPW (furnishes) trees for self-help planting and care by family housing



Angelo Colianni, Directorate of Public Works environmental agronomist, and Robert Kanik, Internal Review Office supervisory auditor, examine the health of a tree Kanik planted previously. Kanik, a self-help tree planting volunteer, has participated in the planting program for several years.

occupants and any organizations on Fort Meade. All who live, work and visit on Fort Meade are encouraged to participate," said Director of Public Works Daniel Hopkins. "Since 1991 participants have planted about 8,300 trees. This program is in keeping with the installation goal to promote environmental stewardship and helps qualify Fort Meade to maintain designation as a 'Tree City USA' community."

It is the eighth year Fort Meade has been named a Tree City USA by the National Arbor Day Foundation. The installation is also the recipient of a Tree City USA Growth Award or demonstrating progress in its community forestry program.

"As we begin the new century, it is especially appropriate to recognize the value of trees in our communities," said John Rosenow, president of the National Arbor Day Foundation. "The trees we plant and care for today will cool and beautify our cities, increase property values, help clean the air and water and conserve energy for years to come."

The Tree City USA program is sponsored by the National Arbor Day Foundation in cooperation with the National Association of State Foresters and the U.S. Department of Agriculture Forest Service. To become a Tree City USA, a community must have:

- A tree board or department.
- A tree care ordinance.
- A comprehensive community forestry program.
- An Arbor Day observance.

Arbor Day was first established in 1872 as a special day set aside for planting trees. It is usually celebrated the last Friday in April. This year post volunteers requested 212 deciduous shade, flowering and evergreen trees. The four to eight-foot-tall, 40-pound woody plants were delivered by flat-bed truck April 18.

DPW Environmental Agronomist Angelo Colianni is in charge of the program. During the week of March 13 to 17, Colianni visited the community's individuals and groups who'd pledged to plant and care for the trees during the critical first year. He answered their questions and used a paint marker to indicate where the trees should be planted based on avoidance of utilities and conformance with the Installation Design Guide.

The trees are obtained at cost from the Maryland Department of Natural Resources TREEmendous Program. The program makes trees available for planting on municipal lands. Federal facilities such as Meade qualify.

"Visiting with the volunteers is one of the highlights of my job," Colianni said. "The most frequent com-



Annette Rogers helps her daughter Michelle dig a hole in their cul-de-sac in Amoroso Court. Rogers organized a community tree planting day for the neighborhood.



ment I get is they realize they won't be here to get the full benefit, but they're doing it for the benefit of those who come behind them," he said. "They're very unselfish."

They include Cub Scouts from packs 379 and 495 who worked recently to plant trees in the Burba Park reforestation areas in a project supported by the Directorate of Personnel and Community Activities. Scouts also mulched 2,000 trees planted by Americorps on 35 acres along highways 175 and 32 on post.

Sometimes an individual takes the challenge to provide a future for the environment. Robert Kanik, an Internal Review Office supervisory auditor, has a window in his office. It overlooks a peaceful stretch of property near building 4216 lined with redbud, dogwood and serviceberry trees.

That wasn't always the case. Kanik planted most of them. He's not done. He signed up to plant and care for 10 more trees this year.

"My vision is to get as many trees planted as I can," Kanik said.

Even the 90 degree heat, 90 percent humidity of previous summers hasn't deterred him. Kanik lugged five-gallon

According to The National Arbor Day Foundation, the idea for Arbor Day originated in Nebraska. It was the lack of trees there that led to the founding of this special day in the 1800s. Among pioneers moving west into the Nebraska Territory in 1854 was J. Sterling Morton from Detroit. He and his wife were nature lovers and quickly established plantings of trees, flowers and shrubs around their new home.

Morton was a journalist who became editor of Nebraska's first newspaper. Given that forum, he spread agricultural information and his enthusiasm for trees. Morton not only advocated tree planting by individuals, but he also encouraged civic organizations and groups to join in. His prominence in the area increased and he became secretary of the Nebraska Territory.

buckets of water every seven to 10 days last year to properly care for the trees he's planted.

"That gets to be a lot. But it's worth it," Kanik said. This year he hopes to get a hose hook-up.

In other cases, it takes a village.

Celebrate Arbor Day

In 1872, Morton first proposed a tree-planting holiday to be called "Arbor Day" at a meeting of the State Board of Agriculture. The date was set for April 10.

Prizes were offered to counties and individuals for properly planting the largest number of trees that day. It was estimated that more than one million trees were planted in Nebraska on the first Arbor Day.

During the 1870s, other states passed legislation to observe Arbor Day and the tradition began in schools in 1882.

Today the most common date for the state observances is the last Friday in April. But in a number of states, Arbor Day is held at other times to coincide with the best tree-planting weather for the particular area. **PWD**

When SSGT Kevin and Annette Rogers and their family moved into post housing on Amoroso Court, they were pleased with their quarters but less pleased about the area outside their door.

"We were the second family here," Kevin said. There were a few spindly trees in the cul-de-sac. But kids from the neighborhood broke them off playing."

Annette decided to do something about it. She rallied the neighborhood and organized a community planting day. By including the entire neighborhood, especially the children, Annette hoped to create a sense of ownership and perhaps instill in the youngsters the idea that trees belong to everyone.

On a windy, Saturday afternoon the neighborhood gathered at the neglected center of Amoroso Court. They brought picks and shovels. They wheelbarrowed large bags of mulch to the site. They began to make a difference in their community.

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*Carol Cummings is a staff writer for Fort Meade's **Soundoff!***



Annisia, Tracy and Jalen Williams, residents of Amoroso Court, prepare to plant a willow oak tree.



Shredder cuts C/D waste at Fort Campbell

by Dana Finney

Creative use of an industrial shredder could help Fort Campbell, KY, reduce construction and demolition (C/D) waste by more than 75 percent. By separating metals for salvage and crushing concrete to replace some of the stone now purchased, the shredder could return nearly all of the waste material to some use.

Some 1,500 buildings at Fort Campbell that are past useful service will be demolished over the next 8 years. Included are 300-400 structures built during WWII, 100 from the Korean War era, and over 1,000 old family housing units. Building materials range from wood and concrete to stucco and asphalt driveways. The C/D waste from this demolition will top 1.2 million cubic yards. Barracks and Motor Pool Modernization programs will add yet more debris over the next 20 years.

"We had a small C and D landfill that was part of a sanitary landfill permitted in 1987," said Wally Crow, former solid waste recycling manager at Fort Campbell (now with the Corps of Engineers). "When we started the demolition program, the C/D waste going into the landfill jumped from about 3,000 tons per month to something like 30,000 to 40,000 per month."

DOD has directed its installations to divert 40 percent of non-hazardous waste from landfills by FY05. Seeking a way to meet this goal, Crow asked the Construction Engineering Research Laboratory (CERL) to evaluate equipment that could reduce the waste volume, generate recyclable materials, and isolate scrap metal.

Crow had seen an industrial shredder on display at a conference and thought it might have possibilities for his growing C/D waste problem. "I started thinking of other things it could be used to crush, like concrete," he said. "I originally thought of reducing the volume of waste before landfilling the materials but found that with a little separation, much could be salvaged."

"Industrial shredders are mostly used to crush scrap metals and various kinds of

This shredder reduced C/D waste volume by 75 percent in a test.



waste from production plants," said CERL researcher Stephen Cosper. "Crushing concrete is a relatively new use for them."

After assessing the features of several products, CERL chose a high-torque, low-speed rotary shredder to test at Fort Campbell. The vertical feed hopper sits on top of two counter-rotating shafts operated by a hydraulic system that can be powered by a portable diesel generator. Four-inch cutting blades shred material placed in the hopper and conveyor belts carry it to the desired location. A magnetic conveyor belt separates ferrous metals and sends them to another drop point.

The Corps' Louisville District worked with the manufacturer to obtain the shredder for testing. Fort Campbell paid only for shipping and operation of the unit, according to Crow.

The C/D waste to be tested came from two structures—a 3-story concrete Korean War-era building and a small wooden building. Debris included reinforced concrete, wood, metals, insulation, plastic, wiring, pipe, brick, and concrete block.

Before starting the test, Cosper's team took soil samples to check the lead content and air samples to assess total lead and nuisance dust. The process was repeated after the test and all samples were analyzed at CERL's Environmental Chemistry Laboratory.

"We didn't find any levels of lead or dust that could be considered significant," said Cosper. "We also checked for lead in the crushed concrete and the amount they contain will not pose a hazard in the areas planned for its use."

Fort Campbell plans to use the crushed concrete and masonry on low-volume roads, parking lots, as clean drainage stone, and as pipe bedding. Due

to the lack of fine-grained particles, recycled aggregate used in vehicle traffic areas will need to have some lime added. The fort currently spends over \$500,000 a year to buy crushed stone. Crow estimates that about 50 percent of this cost will be avoided by using the recycled material.

The volume of waste reduced in the test was over 75 percent. This reduction alone will extend Fort Campbell's current landfill space by 20 years, avoiding the cost of expansion. In addition, the heavy steel from salvaged metal would be sent to the Defense Reutilization and Marketing Office for sale.

Shredders like the one tested can be leased, purchased, or contracted. With the massive demolition scheduled at Fort Campbell, Louisville District was asked to prepare a request for proposal (RFP) to have a shredder provided and operated by a contractor.

"If the operators own their equipment and are responsible for maintaining it, they'll most likely take much better care of it," said Crow. "We decided the RFP would be the best route to take."

Besides its use for C/D reduction, the shredder was also tested for the potential to demilitarize waste material. Some military equipment must be altered to make it unusable before being landfilled. The shredder successfully demilitarized several loads of material fed into it, including gas masks and flak vests.

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UST information available from EPA

by Malcolm McLeod

In January 2000, the U.S. Environmental Protection Agency published a Catalog of EPA Materials on Underground Storage Tanks. The catalog focuses on current, readily available materials pertaining to underground storage tanks. The catalog includes an overview of UST program and UST regulations, leak detection, closure, installation, compliance and enforcement and a number of other important areas. Some of the listings are available at no cost, while others are

available for a fee through the National Technical Information Service (NTIS), Web site: www.ntis.gov/. There are some videos available in addition to paper documents.

The catalog and many of the included EPA publications can be found on the EPA's Web site at www.epa.gov/OUST/pubs/index.htm.

Information on a wide range of UST-related topics can be found at www.epa.gov/OUST/

Additional UST-Related materials that may be useful can be found at other web sites such as:

- National Technical Information Service— www.ntis.gov/
- Government Printing Office— www.access.gpo.gov/su-docs/sale.html
- EPA's National Service Center for Environmental Publications— www.epa.gov/ncepihom
- EPA's Technology Innovation Office— www.clu-in.org/

Of course, Army specific requirements for underground storage tanks can be found in AR 200-1, chapter 4— www.usapa.army.mil/gils/epubs3.html

There are also a number of Corps of Engineers Public Works Technical Bulletins (PWTBs) on important UST concerns such as UST corrosion control, installation guidance, and evaluations (Lessons Learned in compliance). A listing of all PWTBs can be found in the Corps of Engineers Installation Support Division home page under publications (<http://www.usacpw.belvoir.army.mil/pubs/pubs.htm>).

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Malcolm McLeod is a chemical engineer currently working on environmental concerns, including USTs, solid waste management, recycling and deactivated nuclear power plants at HQUSACE, Environmental Directorate.

Pollution prevention for HVAC waterside systems

by Nelson Labbé

Large heating and cooling systems require water to perform the heat transfer involved. To prevent corrosion, scale and biological growth (such as the bacteria that causes Legionnaires' Disease) in the waterside of these systems, chemicals must be added and water quality must be carefully controlled. These systems use large amounts of water and, conversely, large amounts of chemicals during normal operation.

There are several operational areas that should be reviewed at least annually to maximize pollution prevention and water conservation while minimizing chemical use.

Verify that blowdown from cooling tower systems is directed to wastewater plants. The vast majority of systems already send their blowdown to sanitary sewers and wastewater treatment plants, but we occasionally find ones that send blowdown to storm sewers.

Minimize unnecessary blowdown and maintain system water conductivity/ total dissolved solids (TDS) near the maximum allowable. Be aware that chemical vendors may recommend blowdown levels that are higher than necessary. This equates to conductivity/TDS levels that are lower than necessary. Such systems use more chemicals, waste water and waste energy.

Use periodic third-party quality assurance (QA) of cooling/boiler water treatment. Third party QA provides managers and foremen an overall check on the chemi-

cals used, amounts of chemicals used, in-house testing and operational limits in use. This is an especially important tool for government managers who oversee plants operated by a contractor. Huntsville Engineering and Support Center currently manages such a contract for use by all installations. Install chemical feed systems controlled by makeup water flow. These systems ease chemical control for operators and help minimize chemical use.

Install sidestream filters on cooling towers systems to greatly improve scale, corrosion and biological growth control without increasing chemical usage. Steam boilers should have as much condensate returned to the boiler as possible. Increasing the amount of condensate returned to the boiler saves not only energy, but also makeup water and chemicals.

Do not use magnetic, electromagnetic and electrostatic devices that claim to physically treat water to prevent scale and corrosion, eliminating the use of chemicals. These devices are often marketed as an environmentally friendly way of treating water. Unfortunately they have not been found to work.

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Public Works For an
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of the latest Digest,
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and click on publications.



Summer maintenance of boilers

by Nelson Labbé and John Lanzarone

With thoughts of summer on everyone's mind, it's easy to forget about building heating systems. And while DPW maintenance crews may be busy turning on air conditioning systems now, they're also planning to perform shutdown maintenance on many boiler systems. Especially important is the cleaning of the boiler fireside to remove ash and soot deposits.

While dry ash and soot are not corrosive, moisture will be absorbed over the course of the summer. This will make the ash & soot that results from the burning of sulfur bearing fuels acidic. This will lead to acid attack and the corrosion of metal surfaces. When heating season is about to start up, they don't want to discover a boiler that has been undergoing acid attack throughout the summer. They'll be forced into expensive repairs just when heating is needed or worse; a boiler replacement may be necessary.

Following is a short list of guidelines to follow for the seasonal lay-up of boilers:

- Drain and flush the boiler, open all handholes and manholes, clean and remove soot and scale from the firewalls.
- Check the boiler for damage and corrosion.
- If large amounts of scale are discovered in the boiler, consider re-evaluating the boiler water treatment that was used. If no water treatment was performed, start a boiler water treatment program to reduce scale buildup and corrosion.
- Install new gaskets, replace all hand hole and manhole covers, refill boiler and perform a hydrostatic test, if required.
- Disassemble the low water cutoff and water feeding devices, clean and reassemble them.
- Waterside layup – dry: Dry layup involves draining the boilers, cleaning and removing any humidity from the boilers. Dessiccants are often required to maintain low humidity.
- Waterside layup – wet: Wet layup

for more than one month requires draining and cleaning the boiler before filling and dosing with sodium sulfite (200 ppm) and caustic soda (600 ppm as CaCO_3).

- Clean all gas burning equipment and adjust controls. Verify operation of all operating and limit controls, interlocks, shutoffs and gauges.
- Leak test all fuel safety shutoff valves.
- Lubricate all mechanical equipment such as fans and pumps; verify motor rotation and operation.

- Remove pilot assembly, clean and adjust.
- Start maintaining a boiler log.
- Check all boiler piping for leaks and missing insulation.

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Nelson Labbé and John Lanzarone work in the Engineering & Construction Division of the Office of the Deputy Commanding General for Military Programs.

Help for motorpool stormwater pollution—those beads really work!

by Malcolm E. McLeod

A major cause of stormwater pollution at many installations is runoff contaminated by POL leaks from tactical vehicles. Drip pans are sometimes used to catch leaking lubricants but are not adequate in many cases. POL products in the runoff in storm drains violate the NPDES permit as well as the Clean Water Act and AR 200-1. One inexpensive solution to this problem is to use absorbent mats and other spill protection equipment. The ability of these materials to pass stormwater while retaining all POL products is questionable, as are their maintenance requirements.

There are commercially available absorbent materials such as Imbiber Beads® (tiny spherical plastic particles that take up certain liquids (POL products) into their structure, do not release them and will not absorb water. The beads are available as a loose, powder-like product, or packaged as booms, blankets, and pillows. Special storm drain inserts are also available.

Technical information on the performance and suitability of the Imbiber Beads® is now available in a Corps of Engineers Public Works Technical Bulletin (PWTB

200-01-09). Based on the Corps Construction Engineering Research Laboratory preliminary literature search, laboratory testing and observations of Army and Air Force installation experience, the PWTB describes the application of the bead technology, pricing, availability, performance and maintenance requirements in certain applications.

In laboratory tests, the beads performed well and are excellent absorbents, retaining the product even when compressed. They do not absorb water and are an excellent alternative for spill response. The drain inserts, however, can plug with debris and mud and restrict water flow, so their application must be chosen carefully and maintenance would be required for cleaning. After a spill, the bags and pillows would have to be replaced.

The PWTB is available on the U.S. Army Corps of Engineers, Installation Support Center (Huntsville) Techinfo web page: <http://www.hnd.usace.army.mil/techinfo/>.

The USACERL POC for the Imbiber Beads® PWTB is Michelle Hanson, (217) 373-3389, m-hanson@cecer.army.mil **PWD**



Treatment method de-toxifies de-icers

by Dana Finney



Bioreactor at Albany's airport treats runoff from de-icing.

A technology adapted to remove DNT from propellant wastewater has found another use in treating de-icer-contaminated runoff from aircraft. The technology, called "Anaerobic, Granular-Activated Carbon—Fluidized Bed Reactor," or GAC-FBR, is successfully removing de-icers from wastewater at the Albany (NY) International Airport. And it is doing so at a \$3 million savings over the next best treatment option.

U.S. Army Construction Engineering Research Laboratory (CERL) began a few years ago to study GAC-FBR for its potential use in treating wastewater from munitions. The goal was to help military propellant producers achieve dinitrotoluene (DNT) levels required by their National Pollution Discharge Elimination System (NPDES) permits. DNT is a byproduct of single- and multi-base propellant production and enters the waste stream during wet-screening and water-dry processes.

GAC-FBR works through a combined adsorption and biodegradation reaction. The granular-activated carbon surface adsorbs non-polar compounds like DNT and serves as a "storage place" to buffer varying influent concentrations. The DNT is adsorbed

when its concentration is high and is then slowly released when the concentration drops. Bacteria also like to attach to the GAC surface, where they thrive in a liquid, DNT-rich medium. The bacteria use ethanol, which is present in high concentrations in propellant wastewater, as their primary food source, while co-metabolizing the DNT. In other applications, such as pinkwater treatment, ethanol must be added.

GAC-FBR treatment produces methane gas as a byproduct. This gas can be collected and used as fuel for natural-gas powered equipment.

CERL had proven the bioreactor could reduce DNT levels by 99.9% in a bench-scale test at Radford Army Ammunition Plant, VA. The Navy's Indian Head Facility had similar success in treating torpedo propellant (propylene glycol dinitrate). Based on these results, EFX Systems, Inc., allied with CERL and others to learn if GAC-FBR could also treat the wastewater runoff from de-icing airplanes at Albany's airport. The contaminant in this case is propylene glycol (PG), which is the precursor for the torpedo propellant. In the de-icing fluid application, unlike munitions wastewater treatment, there

is no need to add ethanol, as the PG becomes the primary food source.

After tests showed that GAC-FBR achieved a PG concentration of less than 1 milligram per liter, EFX built a full-scale bioreactor at the airport. The system has been operating successfully for 2 years. Albany International Airport won the 1999 Environmental Achievement Award from Airport Council International-North America for adopting the GAC-FBR technology.

GAC-FBR has many more potential applications for treating contaminated wastewater. It was used in Hungary to treat wastewater from pesticide production and, in a recent pilot test, decontaminated pinkwater from explosives manufacture at McAlester Army Ammunition Plant, OK. A demonstration scale bioreactor will be built at McAlester in the coming year.

For more information on GAC-FBR, please contact Dr. Stephen Maloney at CERL, 217-373-3482, toll-free 800-USA-CERL, or email s-maloney@cecer.army.mil **PWD**

Dana Finney is the Chief of Public Affairs at CERL.



How to use appropriate technology appropriately

by Kurt Preston

Appropriate technology used appropriately could be the motto of an innovative management and monitoring system completing implementation at Tobyhanna Army Depot. Called the Facility Environmental Management and Monitoring System, FEMMS provides a flexible approach to facility and process management that can be tailored to application at any facility.

The system integrates the latest on-

line environmental monitoring technologies (sensor systems) and industrial process controls, pollution prevention schemes and an Environmental Information System (EIS) into a facility-wide environmental management system. Although it sounds a bit complex, reaching the goal of meeting the environmental information needs of the installation commander and his staff sells the system.

FEMMS

Capable of being modified to meet the environmental process requirements at any facility, FEMMS modules communicate with a communications systems backbone that supports monitoring and management modules as they come on-line. Instead of the tactile sensations of touch or hearing, the FEMMS nervous system monitors waste or drinking water plants, steam

SWAR helps to track solid waste

by William F. Eng

When the U.S. Army Center for Public Works stopped publishing the Army's Annual Summary of Operations for the Directorates of Public Works in 1997, the Army no longer had the means to collect and report on its solid waste and recycling program. As a result, the Solid Waste Annual Reporting system (SWAR)—a software program which DESCIM (Defense Environmental Security Corporate Information Management) migrated from a Navy-developed program for adoption throughout Department of Defense (DoD)—was fielded within the Army in June 1998 for implementation in January 1999.

SWAR is a user-friendly, Windows-based application used to track information pertaining to the generation, collection, disposal, and recycling of solid waste. There are two SWAR modules, SWAR-Base—for use by installation solid waste managers to track and report solid waste information, and SWAR-HQ—for use by Command and HQ managers to summarize data from the SWAR-Base system to ensure compliance with the DoD Measures of Merit (MOM) and other DoD / Army policies. The information resides at the Army reporting level and provides data in various formats, including text, graphics, and a trend analysis by installation or command. In addition to the annual reporting

requirements, the DoD MOM for solid waste are compiled by both modules, including actual and potential disposal costs, cost avoidance, and percent total diversion tracking.

It is critical that the latest software versions are used, otherwise the roll-up at the MACOM and DA levels will not go smoothly. The latest versions of the SWAR software—SWAR-Base V.1.2 and SWARHQ V.1.3—were officially released on January 3, 2000. You can download the latest versions by going to the DENIX site at <http://www.denix.osd.mil/>, then clicking on DoD Menu, DESCIM PM, then going to "Solid Waste" functional area.

A self-paced tutorial is available either on the CD-ROM or can be downloaded from DENIX. At this time, there are no resident training classes scheduled, however, DESCIM can present an 8-hour training session on-site, if at least 20 people participate and a computer-equipped training facility is provided. Anyone interested in setting up a training class or requesting a CD-ROM copy of the software should contact Katherine Mitchell of DESCIM, (703) 325-4377 DSN: 221, e-mail: mitchell.katherine@descim.osd.mil, for more information.

SWARBase V.1.2 and SWARHQ V.1.3 features:

- Track solid waste in support of the new Solid Waste Measures of Merit (MoM), including the following features:
 - Determine the total percent of solid waste that is diverted from the waste stream to composting or recycling facilities
 - Calculate the actual cost of the diversion program
 - Calculate the potential disposal costs if no diversion was occurring
 - Optionally track waste sent to waste to energy incinerators
 - Determine compliance to the 40% Diversion (by 2005) goals set by DoD
 - Generate reports on Diversion status and costs
- Track the life and status of Government owned Landfills
- Track the sites used for disposal and diversion
- Track and manage recycling, composting, and disposal transactions by category and type of waste, disposition site if applicable, and date
- Track diversion and disposal collection costs
- Track the status of the installation's Qualified Recycling Program (QRP)
- Generate reports and graphs to identify trends indicating both strengths and weaknesses in the solid waste management program

PWD



plants, weather stations, road conditions, storm water systems, hazardous material or waste storage buildings, emergency generators, and emergency generator buildings.

Each application, described in the system as a module, is composed of robust sensors that continuously monitor the critical environmental parameters at key nodes. The sensors provide real time data to the computer brain, the Environmental Information System (EIS). The EIS integrates the data and sends it forward to the most important component of the system, the human brains permanently attached on the broad shoulders of the Tobyhanna environmental staff. These broad shoulders run the Environmental Operations Center. EIS ties all of the modules together through a dedicated web server, Relational Database Management System, Document Management System and Geographic Information System.

Of course, the personnel are not confined only to the operations center. With the right password, personnel can access the system from across the installation via the Intranet.

The FEMMS nervous system with the human-computer "mind meld" at the operations center can provide the following benefits:

- Automated early warning alarms and controls for both environmental hazards and safety related to hazardous materials.
- Information flow with improved environmental situation awareness.
- Ease in development of environmental documentation and reports.
- Online archival ability.
- A ready source of data for public outreach.

Instead of what might be disparate and incompatible monitoring and management systems—the right hand not knowing what the left is doing—FEMMS ties together a planned and completely unified and integrated system.

Tobyhanna Experience

In 1995, Tobyhanna Army Depot, Pennsylvania, began as the test bed to

prove the capability and effectiveness of FEMMS in the military environment. Tobyhanna and Picatinny Arsenal jointly developed a detailed requirement plan with a site-specific set of environmental monitoring, management and pollution prevention requirements. Using the requirements plan and working as a team with Concurrent Technologies Corporation of Johnstown, Pennsylvania, and Electronic Warfare Associates, Inc. (EWA) of Herndon, Virginia, the group performed a detail survey at Tobyhanna. The focus of the survey was to determine the current environmental technology implementation at the facility, identify what needed to be done to bring the facility up to targeted standards, and implemented the technologies to accomplish the program's modules within budgetary constraints.

The idea was to improve Tobyhanna's capability in the following areas:

- Efficiency.
- Competitive advantage by a reduction in environmental and process cost.
- Prevent pollution during operational and production processes.
- Enhanced environmental stewardship.
- Environmental and safety regulatory compliance.
- Improved relations with local communities.

FEMMS—"Two Thumbs Up"

The Deputy Assistant Secretary of the Army (Environment, Safety, & Occupational Health) has given the system the equivalent of a "two thumbs up." On a recent visit to Tobyhanna Army Depot, Ray Fatz, the Deputy Assistant Secretary of the Army (Environment, Safety, & Occupational Health), extensively examined the Facility Environmental Management and Monitoring System (FEMMS) technology and performance, and then personally reviewed the cost savings data. Based on his review, he urges the rest of the Army to "take a close look at FEMMS, since it should be able to help other facilities as well as it has helped Tobyhanna!"

Further proof provided by an Environmental Cost Analysis Methodology (ECAM) analysis performed on the FEMMS program clearly shows quantifiable success in a wide variety of environmental and process control benefits that have resulted in manpower and cost savings for Tobyhanna.

The ECAM, using Activity-Based Accounting, identifies environmental activities associated with processes, and determines the costs and benefits of those activities. The results of the FEMMS ECAM analysis show that the monitoring/control modules and the pollution prevention/treatment projects of the Tobyhanna FEMMS program were and continue to be economically beneficial for the facility.

FEMMS Future

As a proven and tested system, a similar program building environmental brains and nerves into our installations recently began at the Radford Army Ammunition Plant, Virginia. This Radford Environmental Development and Management Program (REDMAP) builds on the work previously accomplished at Tobyhanna by applying the management and monitoring modules tailored to Radford's specific needs. The REDMAP effort at Radford aims to demonstrate the ability to transfer the FEMMS concept and design to other locations.

The FEMMS program, based solidly on up-front analyses that portray the current environmental situation at a facility and determine the need to upgrade, may soon benefit other Army facilities. As Fatz recently stated, hopefully the Tobyhanna success will bring FEMMS to the attention of those who are concerned about environmental management and control in a wide variety of Army facilities. All Army installation managers should consider whether a FEMMS tailored to their needs would be both environmentally helpful and locally cost effective.

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Kurt Preston works in the Directorate of Environmental Programs of OACSIM.



Web cams: the next best thing to being there

by Marie Darling

In South Dakota, John Gagnon connects batteries to a solar panel for use in monitoring the nesting sites of terns and plovers (two endangered species). (Photo courtesy of ERDC/CRREL.)



At an Army Corps laboratory in Hanover, New Hampshire, a technical staff member has taken an Internet idea and made monitoring of remote worksites a reality.

According to John Gagnon, a technical staff member with the U.S. Army Engineer Research and Development Center's Cold Regions Research and Engineering Laboratory (CRREL), all it takes to "see" your work site hundreds of miles away is a camera and phone modem connected to the Internet. And he should know, because Gagnon has successfully linked many web cams to the Internet all over the country over the past couple of years in an effort to bring the work site closer, allowing the researcher to observe from a desktop computer what is hap-

pening at that specific site.

"All it takes is a written proposal and a package that consists of a camera, phone modem and, for a nominal fee, you're up and running on the Internet," explains Gagnon. Initially, Gagnon's idea was to connect the winter-time activities

of the Soo Locks located in the Upper Peninsula of Michigan (the series of locks which connects Lake Superior with the lower lakes) to the Internet so that ice navigation activities could be observed from the Hanover facilities.

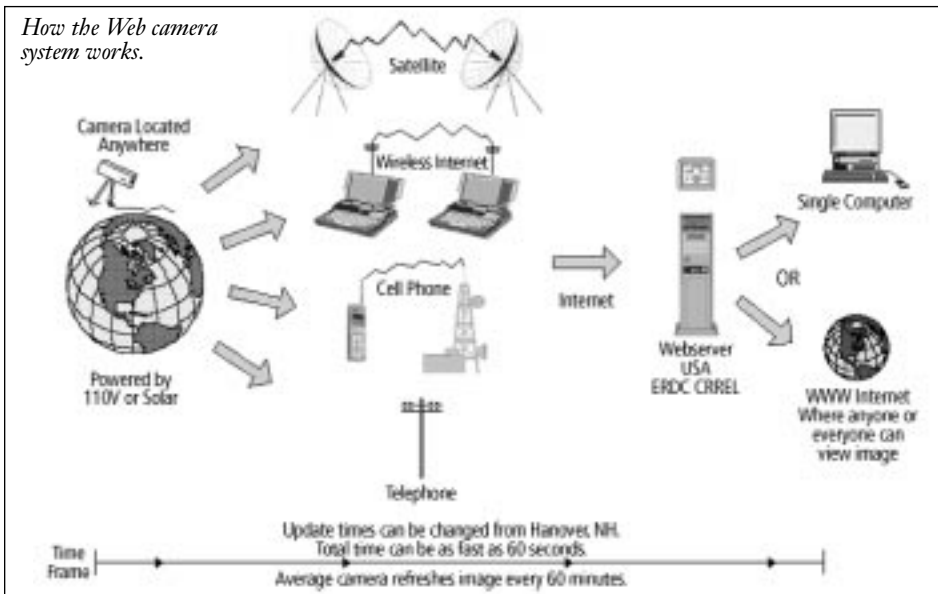
Access to distant sites like the Soo Locks enables research civil engineers like CRREL employee Andrew Tuthill to monitor the severity of the ice conditions at the locks without the cost and downtime of travel from Hanover. Tuthill used this information to calibrate and verify a physical model of the Soo Locks. The purpose of the model study was to develop solutions to ice problems at the locks. The Web cams enabled Tuthill to monitor the ice situation at the Soo Locks during the early spring, better yet, he was able to save images and make animations of the vessels moving into the ice-filled locks. The Web cam images helped Tuthill to understand the interaction between the ice, the vessels, and the structure and then to design a model testing schedule to address the problem in the Hanover lab.

Work being conducted on the Missouri River in Montana is also monitored with near real-time images (a new image is downloaded every 60 minutes) to track ice conditions and progression of river bank erosion of farmland. CRREL research civil engineer Leonard Zabilansky has been working with these farmers first identifying the controlling parameter with the objective of slowing down or eliminating bed scour. However, the ice scour is progressing at such a rapid rate that vast acreage is being lost by the month. In these images you can see the obvious erosion that took place in just 13 days!



A Web cam image of the Soo Locks model in CRREL's Ice Engineering Facility.

How the Web camera system works.





Layaway Economic Analysis (LEA) software tool enhances cultural resource programs

by Caroline Hall

The Department of the Army's historic building management responsibility is immense—there are more than 12,000 buildings that are historically significant and over 40,000 that are over 50 years old. In addition, the Army facilities database indicates that approximately 73,000 Army buildings will become 50 years old within the next 30 years.

The expense of keeping historical yet underused facilities in the Army's inventory places tremendous strain on operations and maintenance budgets that have been steadily decreasing in recent years. Army building managers must make cost effective decisions about the use, maintenance or demolition of these buildings as they comply with the U.S. Environmental Protection Agency's National Historic Preservation Act.

To address this challenge, the U.S. Army Environmental Center, in conjunction with the U.S. Army Engineer Research and Development Center, developed the Layaway Economic Analysis, or LEA, software for use by historic property managers, environmental staff, public works staff and others involved in the management of the Army's real property. This easy-to-use tool is an interactive software program that provides life-cycle cost estimates for the three primary ways the Army handles excess facilities—renovation

and reuse; layaway and reactivation; and deactivation and demolition.

Although many factors must be considered, initially historic property managers review the financial implications of use alternatives to identify the best approach for each site. LEA was designed to provide faster, more consistent cost estimates for these users. Caroline Hall, USAEC historian, explained the significance of the user or manager input. "The manager's knowledge of the site's physical parameters is imperative—managers supply specific data for the facility and its environment," Hall said.

The LEA then combines user-supplied data with a resource database of information that adjusts for geographical location, climate, inflation and industry-standard cost over a 20-year period. The economic analysis software summarizes the results in reports that can then be printed or imported into other software programs, and not only provides cost estimates, but also information necessary to comply with NHPA regulations.

The LEA software was beta tested at three Army installations in real-time and direct-use applications. The National Park Service at Vancouver Barracks, Washington, used LEA to determine the level of government and private funding needed to renovate historic buildings. Using LEA, the NPS

was also able to develop a plan to transfer land ownership to the National Historic Reserve—a partnership between the Army, the National Park Service and the city of Vancouver.

New housing proposals for the William Beaumont Historic District prompted Army managers at Fort Bliss, Texas, to use LEA cost estimates to analyze demolition and construction proposals. At Fort Lincoln, North Dakota, most of the fort's original buildings were transferred to the United Tribes of North Dakota. The two remaining buildings under Army control were analyzed for possible demolition using the LEA software.

In its short existence, the new LEA software tool has helped the Army's Cultural Resource program by assisting historic building decision makers determine the best course of action for handling excess historic facilities.

The Layaway Economic Analysis program, Version 2.04, is available for DENIX account holders at <http://aec.army.mil>. CD-ROM versions are available through the USAEC's Technical Information Center (TIC) at USAECTIC@aec.apgea.army.mil **PWD**

Caroline Hall is a historian/preservation planner at the U.S. Army Environmental Center's Conservation Branch.



Left: This is a Web cam image from one of the monitoring sites in the Fort Peck reach of the Missouri River in Montana that covers an area of 150 miles. Bank erosion happens at a significant rate immediately following the departure of the winter's ice.



Right: Another image, from the same mounted camera as image 4, but 13 days later with a significant amount of the river bank missing. (Photos by L. Zabilansky.)

With Web cam images, researchers are able to save, download, and finally animate the images to show the story. This helps to analyze and, thereby, determine the best prevention method possible. Zabilansky states that, "Visually documenting the ice conditions helps identify subtle changes in ice conditions which may trigger a change in the river hydraulics. Assembling the images into a movie provide an insight into the process which was unavailable prior to implementing Web cam technology. Combining the movies with other on-site measurements has been extremely helpful in defining the problem, which is half the solution."

There are many applications for this type of technology. Academia can use Web camera images to teach students about the mechanics of ice and related problems.



Parametric cost estimating for environmental remediation projects

by Jim Peterson

Accurate and consistent cost estimates for site investigation, remedial design, remedial action, and operations and maintenance activities are critical to any organization responsible for budget submissions, contract negotiations, and financial decision-making. Such estimates are first developed at the order-of-magnitude (+50% to -30%) level. They are later refined to the budget/conceptual (+30% to -15%) level and the definitive (+15% to -5%) level.

The Remedial Action Cost Engineering and Requirements (RACER) system is a parametric, integrated cost estimating software specifically developed for estimating costs associated with environmental remediation projects. The system provides the detail of a definitive estimate, but can also be used at the early order-of-magnitude stage of cost estimating. Using RACER to prepare cost estimates provides the detail and accuracy of manual estimates, but is much faster, less error prone, and much more efficient in comparing alternatives. Over 1,000 users including DOD, DOE, DOI, EPA, consultants and contractors, state agencies, and the private sector currently use RACER.

RACER development began in 1991 and was originally funded by the Air Force. There have been several system releases and upgrades since that time. The latest release, called RACER 2000, occurred in December 1999. The system is a Microsoft Windows-based system designed to provide an easy-to-use, yet accurate cost estimate for site investigations, remediation, site work, sampling and analysis, system operations and maintenance (O&M), site close-out, and other related remediation activities.

RACER uses a patented estimating methodology to generate parametric cost estimates that are based on generic engineering solutions for environmental projects, technologies, and processes. This methodology uses generic engineering solutions and corresponding equations that are applied based on certain parameters that reflect unique project conditions and quantities. Entering site-specific information allows the user to customize the generic engineering solutions based on specific site conditions. Each engineering solution then generates equations that calculate quantities of appropriate labor, equipment, and materials necessary to perform the work. Once the quantities are calculat-

ed, the system uses this information to calculate associated costs.

The RACER system is comprised of individual technologies that fall into four primary categories: Studies, Remedial Design, Remedial Action, and Site Work/Utilities. The user prepares the overall cost estimate by entering information for each selected technology, which the system translates into costs. After the user runs all of the technologies required to estimate the scope of work, the system applies markups consisting of general conditions, overhead, profit, owner costs, and contingencies. The system contains location-specific cost adjustments for over 1,500 cities and also provides the capability to estimate escalated costs over time. A final estimate is then generated once the markups have been applied and is presented via several different reporting options.

The engineering solutions within RACER are based on data from government and industry, construction management agencies, technology contractor and vendors, and historical project information. RACER currently contains over 100 technologies that can be selected by the user in order to estimate different project and site scenarios. Users select technologies to establish a treatment train and produce a detailed cost for performing a variety of tasks. The user can apply the RACER system throughout the life cycle of a project, creating an estimate at the order of magnitude stage and refining it as often as desired through the definitive stage.

For more information on RACER, please contact Jim Peterson at (402) 697-2612. To obtain a copy of the RACER software, please contact Talisman Partners, Ltd. at (303) 771-3103. RACER is offered to federal government employees at no cost. **PWD**

Jim Peterson is a Civil Cost Engineer with the U.S. Army Corps of Engineers' Hazardous, Toxic, and Radioactive Waste Center of Expertise in Omaha, Nebraska.

(continued from previous page)

From the classroom, students can access many sites, such as locks and dams in Illinois and Michigan and even observe experiments and physical model studies conducted at CRREL. Barge operators and lock masters have also used the Web images to keep up-to-date on the ice conditions at particular sites of concern. The technology has also been used to observe endangered species with minimal disruption of their habitat.

We invite you to browse our "cammed" sites at www.crrel.usace.army.mil/ierd/webcams/ (the sites of interest are under the key words "web camera"). The most popular site is

the Soo Locks in Sault Ste. Marie, Michigan. This site has received up to 30,000 hits per day!

With all the existing and potential uses of Web cams, the possibilities are endless. Web cams for engineers at the Cold Regions Laboratory have surely shown that they are the next best thing to being there!

POC is John Gagnon, Ice Engineering Research Facility at CRREL, (603) 646-4186, e-mail: jgagnon@crrel.usace.army.mil. **PWD**

Marie Darling is a public affairs specialist in the Public Affairs Office of the U.S. Army Engineer Research and Development Center's Cold Regions Research and Engineering Laboratory.



ISTD responds to DPW automation training needs

by David Palmer

The Installation Support Training Division (ISTD) in cooperation with HQUSACE Installation Support Division and the Installation Support Center of Expertise, Huntsville, conducted an informal survey to help determine how to meet the Integrated Facilities System and other Public Works automation training requirement. The result was a game plan that will deliver integrated functional and automated training as close to the student as possible. The critical factors in implementing this plan are installations making their training needs known and coordination among installations on when and where training should be presented. ISTD has asked the members of the IFS Configuration Control Board to evaluate the proposed game plan and to provide feedback to ISTD, David C. Palmer, david.c.palmer@hnd01.usace.

army.mil as part of the FY01 PROSPECT survey.

The game plan provides for: Classroom IFS training in Huntsville, at MACOM sites and at installations, the integration of IFS and other automated systems into other ISTD courses, customized on-site workshops and the development of a distance learning platform (web-based courses and courses conducted by video tele-conferencing applications). Additionally, ISTD proposed to provide on-site/regional training. The offer is for installations to request the training needed in weekly increments. The training would then be provided for \$10K per week for 15 students (equals the cost of sending seven people to Huntsville).

This plan was formulated after an analysis of the feedback from our questionnaire. What we found was:

1. Those required to use Standard Army Systems to conduct their business should be trained to use those systems within the context of their functions.
2. Leading training requirements were:
 - a. Real Property Management (DPAS, RPI)
 - b. Master Planning (RPLANS, ASIP, 1391 Processor)
 - c. Financial and Operations Management (DFAS, ISR, EIS)
 - d. Project Management (Contracts, Work Management)
 - e. Systems interfaces
 - f. Management access to data and information (SQL for Managers)
3. Training would reach more of the target population if it were offered:
 - a. On-site or regionally
 - b. Using Distance Learning Approaches
 - c. Computer Based TrainingCentralized classroom training is costly in both time away from the job and costs to provide. The cost per student is high because of the lack of students able to travel to a centralized training site.
4. Most installations have computer classrooms that could support DPW training. ISTD and Fort Lee have developed the linkage required to host training in Huntsville. This linkage should be exportable to installations. Additionally, we are evaluating linking to centralized instructors via VTC and other distance learning tools.

POC is Mary Hodgens, (256) 895-7411, mary.e.hodgens@usace.army.mil **PWD**

David Palmer is the Chief of the Installation Support Training Division, Professional Development Support Center, at Huntsville.

Attention! Immediate training opportunity!

The *DPW Management Orientation Course*, Number 989, has vacancies for the session dates 7-18 August 2000, at Fort Belvoir, Virginia (Tuition — \$900.00).

This course provides an orientation for the new DPW manager and key DPW staff personnel. It covers the administration, organization, functions, and management systems of the installation DPW, including Operations and Maintenance, Army (OMA) and Army Family Housing (AFH) work classification and approval limits; the DPW financial and work management systems; the DPW resource management and annual work plans; DPW automation; and real property management and master planning.

Nominees for the course should be Active Army and Reserve Component commissioned officers, CPT through LTC, or

senior non-commissioned officers, E7 through E9, who have been recently assigned or projected for an assignment to an installation DPW management position; CPT through COL who are currently in or projected for an assignment to a Major Subordinate Command/Major US Army Command MSC/MACOM DPW-related management position; Department of the Army civilians, GS-09 or above, at installation levels.

To enroll in this course, MAIL your DD Form 1556 to: USACE Professional Development Support Center, ATTN: CEHR-P-RG, PO Box 1600, Huntsville, AL 35807-4301 or FAX: (256) 895-7469. Please contact Ms. Moore or Ms. Whitaker of the Registrar's office for additional information about attending this course. **PWD**



ALMC offers Qualified Recycling Program (QRP) training

by William F. Eng

The need for a comprehensive training course for Army QRP managers and operating personnel has become more evident with the authorization of direct sales, inclusion of fired brass and range gleanings as authorized QRP materials, and an Army Audit Agency audit of the Army recycling program in 1997. In response, the Army Logistics Management College (ALMC) at Fort Lee, Virginia, has developed a course that builds on an earlier ALMC course on precious metals identification.

The new Defense Metals Identification and Recycling course will provide DOD and other Federal Government personnel training in methods used to properly identify, classify, segregate, and dispose of recyclable materials and precious metals-bearing materials in furtherance of the DOD Resource, Recycling and Recovery Program and DOD Precious Metals Recovery Program. Emphasis is placed on hands-on laboratory testing of various metals and alloys generated throughout the Department of Defense. The course also includes an overview of the DRMS Recyclable Materials Sales Program.

☎ Three sessions are scheduled for FY 00: 10-14 July, 14-18 August, and 21-25 August. To register for the Defense Metals Identification And Recycling Course, 8G-F2, please contact the ALMC Registrar, Janet Antol, (804) 765-4965 DSN 539, or e-mail: antolj@lee.army.mil **PWD**

U.S. Naval Academy to host DoD Historic Buildings Conference

A Historic Buildings Conference will be held July 25-27, 2000, at the U.S. Naval Academy in Annapolis, Maryland, to address concerns and issues regarding maintenance and repair of historic structures.

The three-day Department of Defense conference at the U.S. Naval Academy will provide a forum and opportunity for DoD/military service installations, major commands, facilities and housing managers and cultural resources representatives to discuss new policy, guidance, privatization, preservation partnerships, regulatory requirements, and economic analysis and other Defense installation requirements.

The conference is designed around specific daily themes that will create dialogue on the critical issues:

Day 1—Tuesday, July 25, 2000 – Issues in DoD Historic Building Management. Day One will cover the policy perspective, The Advisory Council on Historic Preservation new regulations governing the Section 106 of the National Historic Preservation Act, and the impacts of these changes on preservation policy DoD-wide.

Day 2—Wednesday, July 26, 2000 – Solution to Preservation Issues. Day Two will discuss preservation solutions by each service to discuss innovative cost saving approaches and new measures to address cost avoidance.

Day 3—Thursday, July 27, 2000 – Are There Resources That Can Help? Day Three will provide the attendee with resources that are available to the services—new tools such as the Army's economic analysis software for historic buildings and the value of historic preservation.

On the third day, there will be a walking tour of the U.S. Naval Academy of historic properties.

Advance registration will start May 15, 2000. There will be three ways to register for the conference. 1) by mail, 2) by Fax, 3) online by e-mail.

☎ For further information concerning the conference, please contact Horace H. Foxall, Center of Expertise for Preservation of Historic Structures, U.S. Army Corps of Engineers, (CENWS-PM-MB-CX) Phone: (206) 764-4482, Fax: (206) 764-6518, or e-mail: horace.h.foxall@usace.army.mil **PWD**

Affirmative Procurement training—learning how to buy recycled

The U.S. Army Center for Health Promotion and Preventative Medicine (USACHPPM) has developed a half-day seminar on Affirmative Procurement (AP), entitled: "Learning To Buy Recycled," which is designed to educate installation-level personnel on their responsibilities under E.O. 13101. The target audience is anyone in Procurement, Contracting, Environmental, Logistics, Credit card holders, and Product users, which means practically everyone on the installation.

The seminar topics include:

- Background on AP requirements and Executive Order 1310.
- To whom does it apply? What items are included.
- Who is tracking all this and how?
- Achieving compliance—What EPA will be looking for.
- Importance of buying recycled — Why it makes sense.
- Environmentally preferable purchasing.
- Balancing the costs and benefits—considering cost, compliance, toxic reductions, recycled content, energy savings, safety, disposal, and quality of product.
- How the FARs incorporate AP.
- How to write contracts to include AP and recycling requirements.

☎ USACHPPM will bring the seminar to your location. Please contact the Ground Water and Solid Waste Program POCs Pat Rippey, Seminar Coordinator, (410) 436-5201 DSN 584, e-mail: pat.rippy@apg.amedd.army.mil; or Beth Martin, x5202, e-mail: beth.martin@apg.amedd.army.mil **PWD**



Are your PROSPECTs favorable for 2001 training?

by Mary Hodgens

Your answer will be a resounding "Yes" if you look to the *Proponent-Sponsored Engineer Corps Training (PROSPECT) Program* at the *Professional Development Support Center (PDSC)* to meet your training requirements. Whether you want to learn how to prepare the

Military Construction Project Data Form (DD 1391), achieve mastery in Job Order Contracting (JOC), or gain a working knowledge of ORACLE and explore the uses of Structured Query Language (SQL)—you'll find courses designed to meet your needs. The

PROSPECT program has courses developed especially for *The Department of Public Works* audience. Seminars and workshops are also available to meet immediate new training requirements.

Training schedules for FY 2001 are as follows:

Installation Support Training

| Course No. | Title | Dates | Location | Tuition |
|------------|---|------------------|-----------------|---------|
| 253 | 1391 Preparation | 21–25 May 01 | Huntsville, AL | 1,200 |
| 253 | 1391 Processor | 13–17 Nov 01 | Huntsville, AL | 850 |
| 330 | DPW Support Services Contract Admin | 9–13 Jul 01 | Huntsville, AL | 1,330 |
| 990 | DPW Job Order Contracting Basic | 28 Nov–01 Dec 01 | Huntsville, AL | 625 |
| 990 | DPW Job Order Contracting Basic | 01–04 May 01 | Huntsville, AL | 625 |
| 991 | DPW Job Order Contracting Advance | 04–06 Dec 00 | Huntsville, AL | 625 |
| 991 | DPW Job Order Contracting Advance | 07–09 May 01 | Huntsville, AL | 625 |
| 999 | DPW Functional Management | 09–13 Apr 01 | Huntsville, AL | 750 |
| 999 | DPW Functional Management | 09–13 Jul 01 | Huntsville, AL | 750 |
| 979 | DPW Performance-Based Contracting I | 14–18 May 01 | Huntsville, AL | 610 |
| 979 | DPW Performance-Based Contracting II | 30 Jul–03 Aug 01 | Huntsville, AL | 610 |
| 974 | DPW Performance-Based Contracting II | 21–15 May 01 | Huntsville, AL | 610 |
| 988 | DPW Basic Management Orientation | 16–20 Jul 01 | Huntsville, AL | 625 |
| 988 | DPW Basic Management Orientation | 22–26 Jan 01 | Huntsville, AL | 625 |
| 989 | DPW Management Orientation | 06–17 Aug 01 | Ft. Belvoir, VA | 1,200 |
| 989 | DPW Management Orientation | 30 Apr–11 May 01 | Ft. Belvoir, VA | 1,200 |
| 972 | DPW QA for Service Contracts | 26 Feb–02 Mar 01 | Huntsville, AL | 610 |
| 972 | DPW QA for Service Contracts | 16–20 Apr 01 | Huntsville, AL | 610 |
| 101 | Economic Analysis-Military Construction | 29 Jan–02 Feb 01 | Huntsville, AL | 1,850 |
| 75 | Real Property Master Planning | 12–16 Feb 01 | Huntsville, AL | 850 |
| 326 | Master Planning Tools Applied Skills | 08–12 Jan 01 | Huntsville, AL | 900 |
| 286 | Real Property Management | 05–09 Mar 01 | Las Vegas, NV | 700 |
| 286 | Real Property Management | 23–27 Jul 01 | Huntsville, AL | 700 |
| 150 | Real Prop Skills | 22–25 Jan 01 | Huntsville, AL | 850 |
| 214 | Space Utilization | 07–11 May 01 | Huntsville, AL | 850 |

Integrated Facilities Systems Training (IFS)

| | | | | |
|-----|---------------------------------------|------------------|----------------|-----|
| 986 | DPW Advanced SQL | 12–15 Feb 01 | Huntsville, AL | 650 |
| 970 | DPW Basic SQL Applications | 08–09 Feb 01 | Huntsville, AL | 700 |
| 981 | DPW Budget/Cost Accounting | 24–27 Jul 01 | Huntsville, AL | 625 |
| 981 | DPW Budget/Cost Accounting | 30 Jul–02 Aug 01 | Huntsville, AL | 625 |
| 931 | Fire Info Resource Mgmt Sys (FIRMS) | 25–27 Sep 01 | Huntsville, AL | 650 |
| 984 | DPW Planner/Scheduler Functional Tng | 06–08 Mar 01 | Huntsville, AL | 700 |
| 983 | DPW Work Estimating Functional Course | 21–24 Aug 01 | Huntsville, AL | 625 |
| 983 | DPW Work Estimating Functional Course | 27–30 Aug 01 | Huntsville, AL | 625 |
| 980 | DPW Work Reception Functional Tng | 12–14 Jun 01 | Huntsville, AL | 600 |



PROSPECT courses will teach you the skills and provide the information you need to improve your job performance. Participate in the annual PDSC survey from 1 May – 15 June. (However, we will work to accommodate your requirements even after this date.) The survey is distributed through your organization's training office and available on the World Wide Web at <http://pdsc.usace.army.mil>. From the home page, click on "What's New."

The PROSPECT Survey and Purple Book Catalog is provided for use by supervisors, managers, and employees. Employees should be nominated for FY2001 training based upon mission requirements and their individual professional development needs. Course prerequisites have been updated to assist you in matching courses with your training needs and qualifications for training. Please verify that you or your employees meet or exceed the prerequisites before submitting a request for training.

The catalog is available on the web for viewing, downloading to your computer or printing selected pages. Please distribute the catalog and information on the catalog web site as widely as possible within your organization. It is easier to use than ever with new functional and alphabetical indices.

A major goal of ISTD is to establish a training management dialogue with installation Directors of Public Works and Installation Support. The survey process described above is a U.S. Army Corps of Engineer process which is being redesigned to achieve this goal. During this transition period, please contact the ISTD directly, so we can help you accomplish your professional development objectives. POCs are: Program Management and IFS Training, Beverly Carr; Master Planning, Real Property and DPW Contract Training, Joseph Pickett. You are encouraged to share your training needs directly with them.

ISTD personnel stand ready to address your questions about course content, on-site classes, survey participation, etc. Please direct your inquiries to Gini Brown, (256) 895-7408, FAX: (256) 895-7478, e-mail: virginia.r.brown@usace.army.mil. Dave Palmer's e-mail address is david.c.palmer@usace.army.mil.

DoD Annual Recycling Workshop

by William F. Eng

The 2000 DoD Combined Services Recycling Workshop will again be held in conjunction with the National Recycling Coalition (NRC) Annual Congress and Exposition. This year it's in Charlotte, North Carolina, from 10–13 September. The Office of the Federal Environmental Executive (FEE) and other federal agencies will also participate in the NRC Congress with a concurrent and integrated program for all federal / DoD recycling personnel. Approximately 350–400 federal / DoD employees have attended this event in the past.

This year, the Army will be the DoD host/organizer and plans to outdo its 1997 Orlando, Florida, performance. The Army will be coordinating with NRC and OFEE on behalf of the Combined Services Recycling workgroup to arrange for facilities and speakers for the DoD General session, Service breakout sessions, and the concurrent DoD training sessions to ensure that all DoD

participants are afforded the optimum training experience. All the Services and some Defense Agencies will be mounting displays in a unified DoD recycling exhibit.

Leading this effort for the Army will be the Office of the Assistant Chief of Staff for Installation Management, with assistance from the Army Environmental Center at Aberdeen Proving Ground and the Environmental Division at Headquarters, U.S. Army Corps of Engineers, Military Programs.

Planning and organizing activities for this event are already underway. You are invited to get preliminary NRC Congress information from their web site at <http://www.nrc-recycle.org/>, click on NRC Programs, then Annual NRC Congress and Exposition. Specific information on DoD workshop activities will be announced shortly on the ACSIM web site at <http://www.hqda.army.mil/acsimweb/>. **PWD**

mil. Course Managers for Installation Support are Beverly Carr, (256) 895-7432, FAX (256) 895-7478, e-mail: beverly.carr@usace.army.mil; or Joe Pickett, (256) 895-7445, FAX: (256) 895-7478, e-mail: joseph.c.pickett@usace.army.mil. Environmental Training POC is Terry Bashore, (256) 895-7414, FAX: (256) 895-7478, e-mail: terry.bashore@usace.army.mil.

The catalog survey document provides information about submitting your training requirements for class allocations and requesting on-site sessions (classes conducted at *your* facility). Tuition billing information, dates, locations, and tuitions of the projected FY program are included in the survey.

Since the PROSPECT program is financed almost entirely from course tuitions, bills are issued monthly for all quotas used during the preceding month. The bill also includes charges for those allocations not canceled at least 30 days prior to the start date of the course. Our 30-day cancellation policy provides managers increased flexibility in using their training allocations. However, if you are unable to

use an allocation, please notify our Registrar Office as soon as possible. Cancellations received less than 30 days prior to start of training will be billed.

Your training requirements, including on-site requests, must be submitted to the PDSC no later than 15 June 2000, using the automated training tracking system, FAX, or mail. Requirements received after this date will be accepted and incorporated into the program on a space-available basis.

Please direct your questions regarding the survey and course registration to Jackie Moore, (256) 895-7421, e-mail: jackie.d.moore@usace.army.mil; or Sherry Whitaker, (256) 895-7425, FAX: (256) 895-7469, e-mail: sherry.m.whitaker@usace.army.mil. Mailing address is USACE Professional Development Support Center, ATTN: CEHR-P-RG, P.O. Box 1600, Huntsville, AL 35807-4301. **PWD**

Mary Hodgens is an instructional systems specialist in the Installation Support Training Division at Huntsville.



HAZWOPER on-line refresher course offered on-line

by James Mitchell

The Distance Learning Division of the Professional Development Support Center in Huntsville, Alabama, is offering a web-based, 8-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) refresher course to all employees performing on-site activities at known or suspected hazardous waste sites. Employees may take the course at their convenience on their office or home computers. All that is needed is a compatible web browser, the supervisor's permission, and \$95.00.

The HQUSACE Safety and Occupational Health Office (CESO) determined that a web-based, 8-hour refresher course can be used as a viable alternative to the classroom and video-based training courses. CESO submitted the proposed refresher training requirements to OSHA for review. After a positive response was received from OSHA, the course was developed by Solutions to Environmental Problems (STEP), Inc., of Oakridge, Tennessee, with assistance from HQUSACE safety personnel.

Course Prerequisites

Students must have taken the initial 40-hour HAZWOPER classroom course that meets the requirements of 29 CFR 1910.120 and 1926.65. The student's supervisor must verify this before enrollment in the refresher course. The student's supervisor must also verify that the student's 8-hour annual training is current (the student must have had an annual refresher within the last three years, otherwise the refresher course can not be taken without prior approval from the local District Chief, Safety and Occupational Health Office per USACE policy).

In order to be compliant with the OSHA refresher course training requirements, the student must have participated in the following actions prior to taking the 8-hour refresher. The supervisor must ensure that the

student has participated in these OSHA requirements:

1 Attended employer safety meetings relevant to duties the student is to perform under the requirements of the OSHA HAZWOPER standard.

2 Completed reviews and critiques of incidents that have occurred in the past year at hazardous waste sites pertinent to the work the student performed or will be performing.

3 Participated in informational programs or safety meetings presented by the employer to address hazards and protective measures specific to a particular hazardous waste site or job task.

4 Completed review of the elements and standing operating procedures of Site Safety and Health Plans (SSHPs) and is familiar with personnel/alternates responsible for site safety and health for the project sites where the student is/will be assigned.

5 Performed hands-on skill exercises relevant to the selection, use and maintenance of Personal Protective Equipment that the student has/will use.

Registration and Enrollment

All personnel who need the 8-hour annual refresher training are encouraged to select the web-based training course. The new training course provides significant versatility at the local level and lowers overall training costs.

Follow these simple steps to take a course:

First, log onto the PDSC Home Page and go to Distance Learning, register on the system, and request a User ID and password.

Next, select Request New User ID. Then, complete the registration form by filling in all the blank input fields and selecting from the dropdown menu items.

Create your system password by following the instructions at the bottom of the registration form.

Press the Submit Button. Corps employees will receive a notice of automatic system access, and if a valid e-mail address is provided, this notice will be sent to that address. Non-Corps requests will be sent to the Training Administrator for validation and system access.

Last, go to the Training Center (Instruction Building) to select a training course. Choose the 8-Hour HAZWOPER course by title or discipline. A notice that you are not registered to take the course will display the first time your User ID and password is entered. If you want to enroll in the course, follow the screen instructions and press the Submit button to request access to the course. A notice will tell you that your request has been sent to the Training Administrator.

The Training Administrator will validate your request and a notice is sent to the user and supervisor if valid e-mail addresses are provided. Courses with tuitions require a DD Form 1556 or CEFMS Training Request and a MIPR or PR&C to be faxed to the CE Professional Development Support Center before final approval by the Training Administrator.

Once the Training Administrator approves access to the student, he or she has ninety (90) days to complete the course.

Upon successful completion of the course, a certificate is mailed to the student. For additional information concerning course registration and payment, contact the Training Administrator at this e-mail address:

TrainingAdministrator@pdsc.usace.army.mil.

For information about the PROSPECT program, visit the web site <http://pdsc.usace.army.mil>

POC is Mary Hodgens, (256) 895-7411, e-mail: mary.e.hodgens@usace.army.mil **PWD**

James Mitchell works at the Professional Development Support Center at Huntsville.



How to recommend a new course or how to submit a 4713-R

by David Palmer

A major goal for the Installation Support Training Division (ISTD) at the Professional Development Support Center is to focus our courses on the skills, knowledges and abilities you need to have to accomplish public works and installation missions. To do this, we must know what you need to know. Getting the information to you once we know what is needed is our job. However, we need you to tell us what your needs are. This is the training partnership.

Anyone can propose a training requirement. In general, a training requirement exists when performance problems can be traced directly to a skills or knowledge deficiency. Origins of training needs can be individual or

organizational. Newly assigned or promoted employees and the changing business practices are two of the many situations that generate training needs. The Installation Support Training Division may be asked to conduct a training analysis on any function impacting a public works organization or the USACE organization supporting it.

To initiate an evaluation of a training need, some critical information is required. Cost effective course development needs as much information up front as possible. The more complete the initial information provided is, the better the course. USACE uses the

analysis phase of their Corps of Engineers Systems Approach to Training (COESAT) to orga-

nized and define training needs. We have the forms (ENG Form 4713-R) and can help you state your requirement.

The following is a short layout of the type of information required to initiate an analysis of a training need:

- Preliminary Training Evaluation Data Required:
 - What organization will be the proponent of the training?
 - What is the purpose of the training?
 - a. Identify the business needs.
 - b. Identify the performance deficiency.
 - c. Identify perceived reason of performance deficiency.
 - What tasks/topics will be trained?
- Link tasks/topics to performance deficiencies and required capabilities to achieve standards.
- Should all the details of the three teams be taught or just specific tasks?
- What level of training is required?
 - General knowledge of a process
 - Ability to manage the process
 - Ability to evaluate the process
 - Ability to create a process
- Who needs this training? Corps or installation members?
- How many persons will need to be trained?
- Are there DA/DOD standards for the task or will each MACOM have to supplement a general set of guidance?
- Are there automated tools to assist the members perform their tasks? Will they need training on the use of the tool?

POC for ENG Form 4713-R and assistance with recommending new courses for training is David Palmer, Chief, Installation Support Training Division, (256) 895-7451 DSN 760, FAX: (256) 895-7478; e-mail: david.c.palmer@hnd01.usace.army.mil **PWD**

Learn how to recycle fired brass and firing range residue

by William F. Eng

As a direct result of installation concerns about receiving the highest value and quickest payment from the recycling of fired brass when sold through the Defense Reutilization and Marketing Offices, the DUSD (ES) on 15 May 1998 issued an interim policy memorandum. The memo authorized QRPs to recycle and directly sell firing-range scrap consisting of expended brass and mixed metals gleaned from firing-range clearance. As with any new program, a number of improper dispositions of expended brass occurred, which resulted in fatalities.

A DoD Inspector General Report 97-213, "Evaluation of the Disposal of Munitions Items," recommended clarification of DoD regulations covering the recycling of firing-range scrap through QRPs. One of the DoD-IG recommendations was that personnel recycling firing-range scrap are trained in the recognition of "ammunition, explosives, and dangerous articles (AEDA)."

The Professional Development Support Center at the Huntsville, Alabama, has designed a workshop for Qualified Recycling Program personnel in accordance with training requirements identified in the

DUSD(ES) interim policy Memorandum. The objective of this workshop is to train QRP personnel in the recognition of unsafe, and unauthorized material AEDA when recycling firing-range scrap consisting of expended brass and mixed metals. Successful completion of this training is one of the requirements for an Army QRP to continue to directly sell Firing Range Scrap.

The two-day Huntsville workshop (Qualified Recycling Program AEDA Workshop, Course # 444) consists of classroom instruction focusing on ordnance and explosives identification, safety, and QRP requirements and a field trip to the Explosive Ordnance Disposal Museum. Workshop contents include Characteristics of Military Explosives and Chemical Agents, Ammunition Color Codes, Projected Munitions, Rockets and Guided Missiles, Placed Munitions, Thrown Munitions, Dropped Munitions, Pyrotechnics and Propellant Actuated Devices.

Any questions about course availability or fees for these workshops may be referred to Joy Rodriguez, Professional Development Support Center, Huntsville, Alabama, (256) 895-7448, e-mail: rebecca.j.rodriguez@usace.army.mil **PWD**

Public Works

Digest

In This Issue:

Environmental Management on Army Installations



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